Sec. 2.3 Ref 7

TETRA TECH NUS, INC.

REQUEST FOR INFORMATION (RFI)

SCE&G COL Application Project

RFI NUMBER: 112C00329-024	**DATE:** November 14, 2006
PREPARED BY: Steve Connor	**PHONE/FAX:** (803) 641-4939
TO: SCE&G, Steve Summer	
REFERENCE SECTION(S): ER Section 9.3 on site alternatives and 2.5.2.7 on community water supply	**REV.:** N/A

INFORMATION REQUESTED:

Public drinking groundwater system data from South Carolina Department of Health and Environmental Control, specifically, the Freedom of Information office, Jody Hamm at 803/898-3817 (phone) and 803/898-3816 (fax).

The information requested is the reported annual average withdrawal rate (MGD) for groundwater wells, the population served, and permit numbers in the following counties:

County	Systems	Number of Wells
Aiken	City of Aiken	8
	Breezy Hill Water District	13
Barnwell	City of Barnwell	6
	Williston	3
	Blackville	4
Fairfield	Jenkinsville Water District	9
	Midcounty Water District #1	4
	Town of Ridgeway	1
Lexington	Town of Swansea	3
	Gilbert-Summit Rural Water District	8
	Gaston Rural Com. Water District	5
	Town of Chapin	?
	Town of Pelion	?
	Lex Co Joint Municipal WS	?
Newberry	Newberry Co WS	8
	Town of Prosperity	?
Saluda	Saluda Co WS Authority	?

RESPONSE REQUIRED BY: December 18, 2006

IMPACTS: ER sections identified above

RESPONSE INFORMATION

TO:	**FROM:**
OF:	**OF:**

RESPONSE INFORMATION:	Please find the attached information obtained from the Freedom of Information Office at DHEC on 12/8/2006. Julie Giles 12/13/06 Julie Giles 12/13/06
APPROVED FOR USE: Ron Clary Ron Clary	**DATE:** 12-13-06

System Name	SYSTEM NO.	COUNTY	PWS WELL	PERMIT SUB TYPE	WS DESC	AVG GPD	SERVICE POPULATION NUM
AIKEN CITY OF	0210001	AIKEN	G02001	C	HIDDEN HAVEN#2	960000	40498
AIKEN CITY OF	0210001	AIKEN	G02309	C	SHILOH SPRINGS	1460	40498
AIKEN CITY OF	0210001	AIKEN	G02127	C	Woodside	0	40498
AIKEN CITY OF	0210001	AIKEN	G02126	C	TOWN CREEK ROAD	0	40498
AIKEN CITY OF	0210001	AIKEN	G02125	C	Douglas Dr	0	40498
AIKEN CITY OF	0210001	AIKEN	G02386	C	Robin Rd	0	40498
AIKEN CITY OF	0210001	AIKEN	G02396	C	HIDDEN HAVEN #1	0	40498
AIKEN CITY OF	0210001	AIKEN	G02101	C	PINE LOG WELL	1430700	40498
JACKSON TOWN OF	0210002	AIKEN	G02399	C	McElmurray Farm Rd &	72270	3602
JACKSON TOWN OF	0210002	AIKEN	G02141	C	1st Street	65560	3602
JACKSON TOWN OF	0210002	AIKEN	G02142	C	1st Street	200460	3602
WAGENER TOWN OF	0210004	AIKEN	G02143	C	PICKEN ST WELL	144620	1758
WAGENER TOWN OF	0210004	AIKEN	G02388	C	STALEY ST	0	1758
WAGENER TOWN OF	0210004	AIKEN	G02144	C	FIRE DEPT WELL	26000	1758
SALLEY TOWN OF	0210005	AIKEN	G02180	C	PARK WELL	20450	410
SALLEY TOWN OF	0210005	AIKEN	G02179	C	TOWN HALL WELL	14360	410
PERRY TOWN OF	0210006	AIKEN	G02403	C	Back well	0	832
PERRY TOWN OF	0210006	AIKEN	G02324	C	CENTER STREET WELL	42900	832
PERRY TOWN OF	0210006	AIKEN	G02404	C	Front well	0	832
NEW ELLENTON COMMISSION OF PUBLIC WORKS	0210007	AIKEN	G02172	C	DRY BRANCH RD.WELL	199720	4242
NEW ELLENTON COMMISSION OF PUBLIC WORKS	0210007	AIKEN	G02107	C	OLD FIRE HOUSE WELL	7190	4242
NEW ELLENTON COMMISSION OF PUBLIC WORKS	0210007	AIKEN	G02108	C	PUMP HOUSE 1	229690	4242
MONETTA TOWN OF	0210008	AIKEN	G02136	C	COLLUM POND WELL	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02140	C	POWERLINE LEFT	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02133	C	OFFICE WELL	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02135	C	WALDEN STREET	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02283	C	WELL NINE	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02139	C	2ND RIGHT POWERLINE	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02138	C	POWERLINE FIRST RT.	0	1110
MONETTA TOWN OF	0210008	AIKEN	G02137	C	METZ POND WELL	0	1110
LANGLEY W/D	0220001	AIKEN	G02176	C	BACK WELL	59640	1088
LANGLEY W/D	0220001	AIKEN	G02175	C	FRONT WELL	60000	1088
COLLEGE ACRES PUBLIC WORKS	0220002	AIKEN	G02397	C	BEHIND TANK	0	1350
COLLEGE ACRES PUBLIC WORKS	0220002	AIKEN	G02150	C	BACK WELL-BEHIND TK.	95860	1350
COLLEGE ACRES PUBLIC WORKS	0220002	AIKEN	G02149	C	RIGHT	44060	1350
COLLEGE ACRES PUBLIC WORKS	0220002	AIKEN	G02148	C	MIDDLE	12940	1350
COLLEGE ACRES PUBLIC WORKS	0220002	AIKEN	G02147	C	EAST	4470	1350
BATH WATER DISTRICT	0220003	AIKEN	G02152	C	HILL WELL	70930	1064
BATH WATER DISTRICT	0220003	AIKEN	G02151	C	TANK WELL	454300	1064
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02374	C	OUTSIDE OFFICE	0	7436
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02308	C	STORM BRANCH	436510	7436
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02113	C	AIKEN-PINE LOG	66030	7436
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02112	C	BEECH ISLAND AVE	307860	7436
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02111	C	ROUTE 125	290240	7436
BEECH ISLAND WATER DISTRICT	0220004	AIKEN	G02109	C	OFFICE INSIDE	147180	7436
TALATHA RURAL COMMUNITY WATER DISTRICT	0220005	AIKEN	G02153	C	TANK WELL	24000	1553
TALATHA RURAL COMMUNITY WATER DISTRICT	0220005	AIKEN	G02155	C	HIGH SCHOOL WELL	64310	1553
TALATHA RURAL COMMUNITY WATER DISTRICT	0220005	AIKEN	G02154	C	MIDDLE WELL	55870	1553
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02117	C	CORDELE STREET	102640	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02120	C	GREENFIELD	114250	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02116	C	HILL STREET	0	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02315	C	HAYES DR. #2	114760	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02316	C	ASCAUGA LAKE	130770	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02317	C	EDISTO	115640	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02275	C	HAYES DRIVE	89290	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02371	C	SAGE MILL -TANK SITE	76650	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02372	C	BETTIS ACADEMY	68660	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02118	C	MIDLAND VALLEY	18680	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02114	C	OFFICE WELL	133190	11377

BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02115	C	CHALK BED	113720	11377
BREEZY HILL WATER & SEWER COMPANY INC	0220006	AIKEN	G02276	C	NEW WOODRIDGE WELL	72740	11377
BURNETTOWN WATER DISTRICT	0220007	AIKEN	G02158	C	LARGE WELL	29670	1158
BURNETTOWN WATER DISTRICT	0220007	AIKEN	G02157	C	JERRY/MCLLENDON ST.	15440	1158
BURNETTOWN WATER DISTRICT	0220007	AIKEN	G02156	C	WATER TANK WELL	84000	1158
MONTMORENCI-COUCHTON WATER & SEWER DISTRICT INC	0220008	AIKEN	G02277	C	WATER OFFICE WELL	226240	2957
MONTMORENCI-COUCHTON WATER & SEWER DISTRICT INC	0220008	AIKEN	G02161	C	1022 WELL-REDBRANCH	59640	2957
MONTMORENCI-COUCHTON WATER & SEWER DISTRICT INC	0220008	AIKEN	G02159	C	CO-OP	62770	2957
COMPANY INC	0220010	AIKEN	G02348	C	WELL TWO	0	350
COMPANY INC	0220010	AIKEN	G02181	C	TANK WELL	41040	350
VALLEY PUBLIC SERVICES AUTHORITY	0220012	AIKEN	G02123	C	JOHNSTOWN	219000	5897
VALLEY PUBLIC SERVICES AUTHORITY	0220012	AIKEN	G02331	C	3RD STRM BRNCH WELL	50000	5897
VALLEY PUBLIC SERVICES AUTHORITY	0220012	AIKEN	G02121	C	GLOVERVILLE OFFICE	146000	5897
VALLEY PUBLIC SERVICES AUTHORITY	0220012	AIKEN	G02286	C	WALKER WELL	190000	5897
VALLEY PUBLIC SERVICES AUTHORITY	0220012	AIKEN	G02122	C	HOWLANDVILLE	140000	5897
DIXIE CLAY COMPANY	0230003	AIKEN	G02183	P	LEFT SIDE	90	40
DIXIE CLAY COMPANY	0230003	AIKEN	G02182	P	RIGHT SIDE	1270	40
THREE RIVERS REGIONAL LANDFILL	0230015	AIKEN	G02389	S		0	14
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230501	AIKEN	G02131	P	WELL 112G	0	9405
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230501	AIKEN	G02328	P	905-125 B	0	9405
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230501	AIKEN	G02132	P	WELL 113G	0	9405
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230501	AIKEN	G02188	P	WELL 67-B	0	9405
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230509	AIKEN	G02323	P	905 / 136-D	0	74
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230509	AIKEN	G02322	P	905 / 3-D	0	74
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230511	AIKEN	G02306	P	WELL 106-K	0	558
WASHINGTON SAVANNAH RIVER COMPANY LLC	0230511	AIKEN	G02198	P	WELL 95-K	0	558
US DEPT OF ENERGY SAVANNAH RIVER SITE	0230515	AIKEN	G02335	S	WELL ONE-NORTHSIDE	80	10
WHECO CORPORATION	0230516	AIKEN	G02345	S	WELL ONE	0	25
AVONDALE MILLS INC	0240002	AIKEN	G02145	C		260440	1458
WEYERHAEUSER COMPANY	0240004	AIKEN	G02281	N	BEHIND PARKING SHED	8870	10
OAKHILL SD	0250004	AIKEN	G02207	C	FRONT WELL	0	200
OAKHILL SD	0250004	AIKEN	G02206	C	MIDDLE WELL	0	200
OAKHILL SD	0250004	AIKEN	G02205	C	LARGE BACK WELL	0	200
CAROLINA WATER SERVICE INC	0250005	AIKEN	G02209	C	STABLES WELL	5770	257
CAROLINA WATER SERVICE INC	0250005	AIKEN	G02292	C	TENNIS COURT WELL	12170	257
AIKEN CITY OF DEPT OF PUBLIC WORKS	0250009	AIKEN	G02284	C	1000' FROM TANK	12160	116
AIKEN CITY OF DEPT OF PUBLIC WORKS	0250009	AIKEN	G02288	C	175' FROM TANK	14230	116
WRIGHT MHP	0260008	AIKEN	G02217	S	BEHIND HOUSE	0	3
OAKGROVE MHP	0260009	AIKEN	G02401	S		0	7
OAKGROVE MHP	0260009	AIKEN	G02218	S	WELL ONE	0	7
HILLSVIEW MHP	0260016	AIKEN	G02221	C	LARGE WELL HO.ON LFT	0	50
INDEPENDENT MHP	0260020	AIKEN	G02224	S	WELL ON LEFT-SOUTHSI	0	16
INDEPENDENT MHP	0260020	AIKEN	G02223	S	WELL ON RIGHT-NORTHS	0	16
BODIES MHP	0260022	AIKEN	G02226	S	PARK WELL	0	11
WATERS MHP	0260033	AIKEN	G02232	S	WELL ONE	0	10
WATKINS MHP	0260034	AIKEN	G02233	S	WELL ONE	0	13
WHISKEY SOUTH #1	0260036	AIKEN	G02236	S	MIDDLE OF PARK	0	16
C&H HOME PARK	0260037	AIKEN	G02238	C	MIDDLE OF PARK	1250	26
CAMERON MHP	0260038	AIKEN	G02239	C	MIDDLE OF PARK	0	81
CROSBYS MHP	0260039	AIKEN	G02248	S	OLD BACK WELL	0	14
CROSBYS MHP	0260039	AIKEN	G02285	S	NEW WELL BY WORKSHOP	0	14
WHISKEY SOUTH #2	0260040	AIKEN	G02237	S	HILL TOP WELL	0	14
J&H MHP #1	0260042	AIKEN	G02318	S	LEFT OF AUCTION BARN	0	6
J&H MHP #2	0260043	AIKEN	G02319	S	MIDDLE OF PARK	0	5
JOHNSONS MHP	0260045	AIKEN	G02332	S	WELL ONE	19200	23
CELLUS MOBILE HOME PARK	0260046	AIKEN	G02333	S	WELL FOUR-SOUTH SIDE	24960	18
WALDEN MOBILE HOME PARK	0260047	AIKEN	G02334	S	WELL #3-NORTHSIDE	19200	18
WILLIAMS MHP	0260049	AIKEN	G02338	S	WELL #1	0	25
WILLIAMS MHP	0260049	AIKEN	G02366	S	NEW WELL	0	25
MURRAY MHP	0260050	AIKEN	G02339	S	WELL ONE	0	12

J JACKSON'S	0260052	AIKEN	G02341	S	BEHIND OWNER'S TRL	0	17
PINEVIEW BEND MHP	0260053	AIKEN	G02342	S	BACK LEFT OF PARK	0	21
PACER PARK I	0260054	AIKEN	G02343	S	WELL ONE	0	14
PACER PARK II	0260056	AIKEN	G02346	S	WELL ONE	0	10
MT PLEASANT ACRES	0260058	AIKEN	G02349	S	BEHIND 3RD TRAILER	0	14
MILTON WILLIAMS MHP	0260060	AIKEN	G02353	S	BACK OF TRAILER PRK	0	8
PARKER PLACE	0260061	AIKEN	G02354	S	RT FRNT ONWER'S HOME	0	13
TISDALE MHP	0260062	AIKEN	G02355	S	BACK LFT OF PARK	0	13
QUAIL HOLLOW MHP	0260063	AIKEN	G02361	S	BY BARN	0	8
MOSELEY MHP	0260064	AIKEN	G02367	S	WELL #1	0	10
ENGLISH MHP	0260065	AIKEN	G02370	S	WELL #1	0	23
FLEMING MHP	0260067	AIKEN	G02373	S	WELL	0	7
NICHOLS MOBILE HOME PARK	0260068	AIKEN	G02376	S	WELL #1	0	11
NICHOLS MOBILE HOME PARK	0260068	AIKEN	G02377	S	WELL #2	0	11
AL PADGETT PUBLIC WATER SUPPLY	0260069	AIKEN	G02385	S	WELL ONE	0	12
LINDA BARTON MHP	0260070	AIKEN	G02387	S	WELL #1	0	10
MCMULLIAN MHP #2	0260071	AIKEN	G02390	S	FRONT	0	3
HIDDEN SPRINGS MHP	0260072	AIKEN	G02391	S	MIDDLE OF FIELD	0	20
ANDREA HUTTO MHP	0260073	AIKEN	G02393	S	COLBERT BRIDGE RD	0	10
NORTH PINES MOBILE MANOR	0260075	AIKEN	G02400	S	MIDDLE OF PARK	0	20
OAKWOOD SCHOOL	0270103	AIKEN	G02307	P	BEHIND LEFT SCHOOL	0	325
AIKEN GYMNASTICS	0270104	AIKEN	G02329	N	WELL ONE	0	40
BOBBY'S BBQ	0270206	AIKEN	G02303	N	WELL ONE	0	200
WHISKEY SOUTH INC	0270300	AIKEN	G02405	C	2860 Banks Mill Rd	0	35
GUESTHOUSE INN	0270401	AIKEN	G02252	P	NEXT TO PLANT	12550	220
GUESTHOUSE INN	0270401	AIKEN	G02251	P	BETWEEN TANKS	11620	220
ASHLEY MOTOR MOTEL	0270402	AIKEN	G02253	N	WELL ONE	0	45
DELUXE INN	0270409	AIKEN	G02258	N	WELL ONE	0	39
SC PARKS RECREATION & TOURISM AIKEN CAMPGROUND	0270600	AIKEN	G02260	N	SWIM-LAKE/CONCESSION	0	140
SC PARKS RECREATION &TOURISM AIKEN CAMPGROUND	0270601	AIKEN	G02261	N	CAMPING AREA	0	25
SC PARKS RECREATION & TOURISM AIKEN SP FISH	0270602	AIKEN	G02262	S	FISH LAKE	0	24
BISHOP GRAVATT CENTER	0270677	AIKEN	G02267	P	REC. AREA WELL	160	45
BISHOP GRAVATT CENTER	0270677	AIKEN	G02266	P	MAIN CAMP WELL	390	45
CAMP LONG LEADERSHIP CTR	0270678	AIKEN	G02408	N	W W Long 4-H Camp, W	0	150
CAMP LONG LEADERSHIP CTR	0270678	AIKEN	G02269	N	NEW WELL	0	150
NAZARENE CAMPGROUND	0270800	AIKEN	G02289	N	NEW MAIN ENTR. WELL	0	300
NAZARENE CAMPGROUND	0270800	AIKEN	G02271	N	POOLSIDE WELL	0	300
NAZARENE CAMPGROUND	0270800	AIKEN	G02402	N	Back-up well	0	300
BEN FEAGIN	0270901	AIKEN	G02272	S	PIT WELL	0	19
STATE PARK GROCERY	0270905	AIKEN	G02314	N	WELL ONE	0	25
SAND HILL RENTALS	0270906	AIKEN	G02321	S	WELL ONE	0	11
WINDSOR GENERAL STORE	0270907	AIKEN	G02325	N	WELL ONE	0	24
O R A	0270908	AIKEN	G02328	N	WELL #1 NORTH	0	26
UNIVERSITY OF GEORGIA RESEARCH FOUNDATION	0270909	AIKEN	G02330	N	WELL ONE	0	35
KENT'S CORNER/HWY19&I-20	0270911	AIKEN	G02351	N	WELL #1	0	150
SAVANNAH RIVER SITE L AREA FIRE STATION	0270912	AIKEN	G02356	S	905-126G	2000	5
SATA SMALL ARMS TRAINING AREA	0270914	AIKEN	G02358	S	905-118G	300	20
PAR POND	0270916	AIKEN	G02360	S	905-131-G	500	10
KENTS KORNER 16	0270918	AIKEN	G02363	N	WELL	0	50
JAMES BLAND MD	0270920	AIKEN	G02369	S	WELL #1	0	24
JARRETT RIFLES	0270921	AIKEN	G02378	S	WELL ONE	0	9
HOLE-N-ONE MINIATURE GOLF & GAMES	0270922	AIKEN	G02379	S	WELL ONE	0	23
WHISKEY ROAD STORAGE	0270923	AIKEN	G02381	S	WELL #1	0	5
HWY 19 BLIMPIE & SHELL STATION	0270924	AIKEN	G02382	N	WELL #1	0	109
WHITE POND COMMUNITY CENTER	0270925	AIKEN	G02392	S		0	3
JERROLD WATSON LC #4	0271002	AIKEN	G02312	S	WELL # 1	0	24
HOLMES LABOR CAMP #4 & #5	0271003	AIKEN	G02241	N	N SIDE- A. WARE RD	0	50
HOLMES LABOR CAMP #3	0271004	AIKEN	G02242	N	FAR RIGHT CAMP WELL	0	60
HOLMES LABOR CAMP #6	0271005	AIKEN	G02243	S	NEW CAMP WELL	0	20
HOLMES LABOR CAMP #7	0271006	AIKEN	G02240	S	MAIN ROAD WELL	0	14

DUKES BAR-B-QUE	0272002	AIKEN	G02385	N	WELL	0	25
KENTS KORNER 18	0272003	AIKEN	G02375	N	WELL ONE	0	30
ELLEN'S BAR & GRILL	0272004	AIKEN	G02383	S	SIDE BLDG	0	24
CLUB VERDI	0272006	AIKEN	G02384	N	WELL ONE	0	23
D&B TAVERN & GRILL	0272008	AIKEN	G02407	N	2720 Edgefield Hwy 1	0	
GENTRY BARBE Q BARN	0272009	AIKEN	G02406	N	531 Old Edgefield Rd	20	75
STOP N SAVE INC	0274000	AIKEN	G02409	N	Left of store.	0	
BARNWELL CITY OF	0610001	BARNWELL	G06109	C	HWY # 3 WELL	491000	5035
BARNWELL CITY OF	0610001	BARNWELL	G06110	C	SHURON WELL	115230	5035
BARNWELL CITY OF	0610001	BARNWELL	G06107	C	SHOP WELL	430000	5035
BARNWELL CITY OF	0610001	BARNWELL	G06108	C	MAIN STREET WELL	0	5035
BARNWELL CITY OF	0610001	BARNWELL	G06111	C	ROSE STREET	152600	5035
BARNWELL CITY OF	0610001	BARNWELL	G06106	C	JEHOVAHS WITNESS WEL	0	5035
WILLISTON TOWN OF	0610002	BARNWELL	G06115	C	INDUSTRIAL PARK	26120	3307
WILLISTON TOWN OF	0610002	BARNWELL	G06147	C	HALFORD STREET	474840	3307
WILLISTON TOWN OF	0610002	BARNWELL	G06186	C	ELKO ST WELL	169600	3307
BLACKVILLE TOWN OF	0610003	BARNWELL	G06116	C	Dexter St	225830	2973
BLACKVILLE TOWN OF	0610003	BARNWELL	G06118	C	Hope Ave	301400	2973
BLACKVILLE TOWN OF	0610003	BARNWELL	G06117	C	Railroad Ave	84100	2973
HILDA TOWN OF	0610004	BARNWELL	G06123	C	TOWN HALL WELL	34470	466
HILDA TOWN OF	0610004	BARNWELL	G06174	C	NEW WELL	620	466
ELKO TOWN OF	0610005	BARNWELL	G06124	C	NEXT TO TANK	0	462
STARMET CMI	0630006	BARNWELL	G06126	S	BEHIND FIRE TANK	28060	6
STANFORD'S TAX SERVICE	0630007	BARNWELL	G06127	S	BEHIND OFFICE	1500	10
MATERIAL SUPPLY CO INC	0630010	BARNWELL	G06160	S	MIDDLE OF SITE	0	15
SCE&G FLEET MAINT FAC WARRENVILLE	0630011	BARNWELL	G06198	N	SCE&G Electric Opera	0	
JACKSON MHP	0660002	BARNWELL	G06130	C	FRONT WELL	0	62
J R 'S MHP	0660004	BARNWELL	G06145	S	BEHIND TRAILER #1	0	9
DORIS' TRAILER PARK	0660005	BARNWELL	G06146	S	WELL ONE	0	7
MOORES TRAILER PARK	0660006	BARNWELL	G06156	S	WELL #2	0	8
MOORES TRAILER PARK	0660006	BARNWELL	G06155	S	WELL #1	0	8
SHADY PINES MHP	0660008	BARNWELL	G06164	S	MIDDLE OF PARK	0	14
CARTER PLACE	0660009	BARNWELL	G06173	S	WELL LEFT IN FIELD	0	22
CARTER PLACE	0660009	BARNWELL	G06172	S	WELL #1	0	22
JACKSON'S TRAILER PARK #2	0660010	BARNWELL	G06158	S	NEW WELL	0	20
PINE ACRES MHP	0660011	BARNWELL	G06180	S	BEHIND MHP	0	11
APPOLLO COURT	0660012	BARNWELL	G06193	S		0	
BLACKVILLE MEDICAL CENTER	0670002	BARNWELL	G06132	N	WELL ONE	1210	36
TRIPLE E RESIDENTIAL CARE	0670003	BARNWELL	G06166	S	LEFT/BCK OF BLDG	0	14
HEALING SPRINGS	0670075	BARNWELL	G06133	S	FLOWING WELL RIGHT	0	6
HEALING SPRINGS	0670075	BARNWELL	G06136	S	FLOWING WELL BACK	0	6
HEALING SPRINGS	0670075	BARNWELL	G06135	S	FLOWING WELL MIDDLE	0	6
LIFEGATE ALLIANCE CHURCH	0670101	BARNWELL	G06175	S	WELL ONE	0	11
BLACKS RESTAURANT	0670202	BARNWELL	G06138	N	WELL ONE	0	25
SC DEPT OF PARKS RECREATION & TOURISM BARNWELL SP	0670600	BARNWELL	G06139	N	LAKE SIDE	6000	114
SWEETWATER COUNTRY CLUB	0670800	BARNWELL	G06148	N	NEW WELL #2	0	80
EDISTO RESEARCH AND EDUCATION CENTER	0670900	BARNWELL	G06128	P	WELL ONE	0	35
BARNWELL EYE CENTER	0670902	BARNWELL	G06161	S	LEFT OF BUILDING	0	3
BARNWELL COUNTY AIRPORT	0670904	BARNWELL	G06165	S	LEFT OF MAIN BLDG	0	15
ASHLEIGH PLACE GIRLS HOME	0670908	BARNWELL	G06171	S	WELL ONE	0	20
BOYETTE HOME CENTER/BODIFORD LEASE PROPERTY	0670909	BARNWELL	G06176	S	WELL 1	0	4
WILLIAMS ENTERTAINMENT CENTER	0670911	BARNWELL	G06177	N	WELL #1	0	25
SHELTON'S FOOD STORES INC	0670912	BARNWELL	G06178	N	OLDER WELL	0	25
SHELTON'S FOOD STORES INC	0670912	BARNWELL	G06179	N	NEWER WELL	0	25
GENERATIONS UNLIMITED	0670913	BARNWELL	G06181	N	BHND & RT OF CENTER	0	45
BOUCHILLON PAINT & BODY INC	0670916	BARNWELL	G06184	S	BEHIND AUTO BODY SHP	0	9
SCAT PARK WATER SYSTEM	0670918	BARNWELL	G06189	P		30090	125
SCAT PARK WATER SYSTEM	0670918	BARNWELL	G06190	P		95420	125
DYCHES FUNERAL HOME INC	0670919	BARNWELL	G06191	N		0	100
AIRPORT AUTOMOTIVE	0670920	BARNWELL	G06192	S		0	8

HILDA AUCTION	0670921	BARNWELL	G06194	N		0	50
STILL, GLORIA	0670922	BARNWELL	G06195	N	2563 Healing Springs	0	26
BOLEN, NORMAN	0670923	BARNWELL	G06197	N		0	25
CHAPPELL FARMS INC	0671000	BARNWELL	G06151	N	WELL #1	0	60
CHAPPEL'S LABOR CAMP #3	0671002	BARNWELL	G06153	S	WELL #1	0	20
EL BAB SHRINE CLUB	0672001	BARNWELL	G06154	S	WELL ONE	0	15
TYLER'S BAR AND GRILL	0672002	BARNWELL	G06187	N		0	90
SOMETHING DIFFERENT	0672003	BARNWELL	G06188	N		0	25
RIDGEWAY TOWN OF	2010002	FAIRFIELD	G20127	C	HWY 34 AT ELV.TANK	56200	950
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20104	C	HWY 215 AT CT RD 205	18190	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20160	C	WELL #13	62010	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20129	C	RIGHT OF MCCORY SCH.	0	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20128	C	AT MCCORY LISTON SCH	10800	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20107	C	HWY 215 SANDY FORK C	24140	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20110	C	AT BLAIR FIRE STA.	19160	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20109	C	HWY 99 SO.OF HWY 34	1090	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20133	C	SEC.RD.99 PAST SHELT	1400	1969
JENKINSVILLE WATER COMPANY	2020001	FAIRFIELD	G20105	C	HWY 205 ON RIGHT	8530	1969
MIDCOUNTY WATER DIST#1	2020002	FAIRFIELD	G20135	C	POWER LINE RIGHTAWAY	30270	1487
MIDCOUNTY WATER DIST#1	2020002	FAIRFIELD	G20134	C	LEFT FRONT OF S/D	0	1487
MIDCOUNTY WATER DIST#1	2020002	FAIRFIELD	G20132	C	RD.38 1/2MI.PAST OFF	10590	1487
MIDCOUNTY WATER DIST#1	2020002	FAIRFIELD	G20130	C	LEFT OF HWY. 321	21550	1487
MIDCOUNTY WATER DIST#1	2020002	FAIRFIELD	G20131	C	RIGHT OF OFFICE	20810	1487
SCE&G PARR STEAM PLANT	2030005	FAIRFIELD	G20159	S	RIGHT SIDE OF ENTR	0	10
CHAPPELL MHP	2060001	FAIRFIELD	G20136	S	BTWN.MHP & HWY. 215	0	23
COLEY'S MHP	2060002	FAIRFIELD	G20138	S	BEHIND LOT'O'AT TANK	0	16
COLEY'S MHP	2060002	FAIRFIELD	G20137	S	BEHIND LOT O	0	16
GROVER WILSON RD PROPERTY	2060003	FAIRFIELD	G20171	S	IN FRONT OF PROPERTY	0	15
FAIRFIELD HEALTH CARE CENTER LLC	2070002	FAIRFIELD	G20140	C	AT CHAPPLE	0	200
FAIRFIELD HEALTH CARE CENTER LLC	2070002	FAIRFIELD	G20139	C	ACROSS RD.FROM OFFIC	0	200
SC PARKS RECREATION & TOURISM WATEREE STATE PARK	2070600	FAIRFIELD	G20111	N	LEFT OF ENTRANCE	0	7
CAMP LONGRIDGE	2070675	FAIRFIELD	G20113	S	STOR.BLDG./ BY HOUSE	0	25
CAMP LONGRIDGE	2070675	FAIRFIELD	G20112	S	BEHIND DINING HALL	0	25
SCE&G MONTICELLO REC	2070676	FAIRFIELD	G20114	N	LOC BOAT LANDING	0	26
SCE&G MONTICELLO REC #2	2070677	FAIRFIELD	G20115	N	BEACH AREA	0	26
DUTCHMAN CREEK MARINA & CAMPGROUND LLC	2070850	FAIRFIELD	G20156	N	WELL #2	0	26
SUTTON'S LANDING	2070852	FAIRFIELD	G20146	S	LEFTSIDE OF DRIVEWAY	0	2
WHITE OAK CONFERENCE CENTER	2070900	FAIRFIELD	G20118	N	RD.BEHIND POOL AREA	10750	58
WHITE OAK CONFERENCE CENTER	2070900	FAIRFIELD	G20152	N	WELL FOUR	8210	58
WHITE OAK CONFERENCE CENTER	2070900	FAIRFIELD	G20119	N	100 YDS.LEFT CHEM RM	13060	58
WHITE OAK CONFERENCE CENTER	2070900	FAIRFIELD	G20120	N	LEFT OF RD./PIC.SHEL	1530	58
OUTBOARD BOATING CLUB OF FAIRFIELD	2070903	FAIRFIELD	G20153	N	WELL #1	0	150
OUTBOARD BOATING CLUB OF FAIRFIELD	2070903	FAIRFIELD	G20154	N	WELL #2	0	150
LONGTOWN CORNER STORE	2070904	FAIRFIELD	G20168	N	WELL #2	0	100
FAIRFIELD COUNTY SOLID WASTE COLLECTION FAC	2070905	FAIRFIELD	G20157	S	WELL #1	0	2
VFW POST 8346	2070906	FAIRFIELD	G20158	S	WELL #1	0	70
BLACKSTOCK-WOODWARD FIRE	2070908	FAIRFIELD	G20162	S	RIGHT BACK OF BLDG	0	12
BLACKSTOCK FISH CAMP	2070909	FAIRFIELD	G20163	N	RIGHT OF BLDG	0	25
BLACKSTOCK SHELL	2070910	FAIRFIELD	G20164	N	WELL ONE	0	25
BLYTHE WOOD WORKS	2070911	FAIRFIELD	G20165	S	LEFT REAR OF BLDG	0	6
SCE&G 99 BOAT RAMP	2070913	FAIRFIELD	G20167	N	SHELTER AT PARK LOT	0	26
UNITED AMERICAN ELECTION SUPPLY CO	2070914	FAIRFIELD	G20169	S	LEFT OF BLDG	0	4
HARISON'S REST STOP	2070915	FAIRFIELD	G20170	S	FAR REAR OF STORE	0	11
WATEREE STORAGE CENTER	2070917	FAIRFIELD	G20172	S	REAR LEFT OF PROPERT	0	4
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32107	C	BRIDGEWD CT BLCK CRK	5840	4518
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32109	C	CURTIS HENDRIX	22290	4518
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32104	C	MAIN ST-GRADE SCHOOL	16780	4518
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32105	C	RT SIDE WATERS FERRY	21720	4518
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32834	C	2505 POND BRANCH RD	161970	4518
GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32878	C	4925 TWO NOTCH RD	90730	4518

GILBERT SUMMIT RURAL WATER DISTRICT	3220001	LEXINGTON	G32677	C	501 AC BOUKNIGHT	89120	4518
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32115	C	LEFT OF JODIE ST.	42110	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32114	C	R/S MAGINCE-OFF MACK	30480	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32739	C	AT TANK AT HWY #321	101630	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32113	C	IN FRONT OF OFFICE	106950	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32874	C	AT ELEVATED TANK	87040	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32918	C	NEXT TO ELEVATED TAN	0	6756
GASTON RURAL WATER DISTRICT	3220002	LEXINGTON	G32116	C	HARMONY CH&WOODTRAIL	95210	6756
US SILICA COMPANY	3230005	LEXINGTON	G32169	P	BTWN.WELL 1 & R/R TR	0	36
BORAL BRICKS INC	3230014	LEXINGTON	G32174	P	LEFT OF DR-WAY AT TK	0	42
PALMETTO FABRICATORS INC	3230026	LEXINGTON	G32750	S	WELL ONE	0	11
SANDY RUN SUBSTATION	3230027	LEXINGTON	G32751	S	WELL 1	0	5
B&T SAND COMPANY INC	3230029	LEXINGTON	G32879	S	BEYOND SCALE HSE1OOY	0	5
METRO SIGNS INC	3230030	LEXINGTON	G32826	S	WELL ONE	0	24
INDUSTRIAL GALVANIZER OF SC	3230031	LEXINGTON	G32832	S	LEFT REAR OF PROPERT	0	23
INDUSTRIAL GALVANIZER OF SC	3230031	LEXINGTON	G32831	S	FRONT RT OF BLDG	0	23
R J CORMAN	3230033	LEXINGTON	G32894	S	RIGHT OF DRIVEWAY	0	5
TAYLORS POULTRY	3230801	LEXINGTON	G32178	N	BHND.RIGHT OF STORE	0	25
CAUGHMAN MEAT PLANT	3230803	LEXINGTON	G32180	N	RIGHTSIDE ENTR.OF PT	0	26
FOUR OAKS FARMS	3230806	LEXINGTON	G32181	N	RIGHT OF STOR.@REAR	0	26
OLE TIMEY MEATS	3230807	LEXINGTON	G32182	N	RIGHT REAR OF STORE	0	50
WOODLAKE SHORES	3250001	LEXINGTON	G32184	S	RIGHT OF WOODLAKE CT	0	24
USSC/LAKEWOOD ESTATES	3250005	LEXINGTON	G32694	C	BEYOND WELL ONE	0	492
USSC/LAKEWOOD ESTATES	3250005	LEXINGTON	G32300	C	RIGHT / SMALLWOOD DR	0	492
USSC/LAKEWOOD ESTATES	3250005	LEXINGTON	G32250	C	AT ARROWHEAD RD&CIR	0	492
USSC/LAKEWOOD ESTATES	3250005	LEXINGTON	G32190	C	RIGHT ON NEWBERRY LN	7620	492
SUBURBAN WATER COMPANY	3250011	LEXINGTON	G32199	S	FORK/E-WATER&BUNDRIC	0	23
USSC/MURRAY LODGE	3250013	LEXINGTON	G32201	C	BHND.379 ST.THOMAS	3570	146
USSC/MURRAY LODGE	3250013	LEXINGTON	G32200	C	ACROSS 363 ST THOM.	7770	146
AAA/ MURRAY HILL EST	3250014	LEXINGTON	G32202	C	OAK CR. AT HORSE CRK	28800	134
CWS HEATHERWOOD BLUE RID	3250015	LEXINGTON	G32206	C	END OF McTAISH/LEFT	14330	573
CWS HEATHERWOOD BLUE RID	3250015	LEXINGTON	G32306	C	BEHIND BLDG. 128-Cal	22140	573
CWS FALCON RANCHES	3250016	LEXINGTON	G32207	C	LEFTSIDE 201 FALCOLN	6260	281
CWS FALCON RANCHES	3250016	LEXINGTON	G32208	C	CRYSTAL SPR.&REDMOND	17090	281
USSC/MURRAY PARK EST	3250019	LEXINGTON	G32213	C	LEFTSIDE PINE Point	4450	126
USSC/MURRAY PARK EST	3250019	LEXINGTON	G32214	C	BEHIND WHITE HOUSE	2700	126
USSC/INDIAN COVE S/D	3250020	LEXINGTON	G32215	C	ACROSS/176 INDN.COVE	2900	92
USSC/INDIAN COVE S/D	3250020	LEXINGTON	G32216	C	FRONT/104 INDN. COVE	1210	92
USSC/EMMA TERRACE	3250022	LEXINGTON	G32221	C	END OF EMMA DR ON RT	5330	65
USSC/TANYA TERRACE	3250023	LEXINGTON	G32224	C	BTWN101&104 MARGUERI	62	54
USSC/TANYA TERRACE	3250023	LEXINGTON	G32223	C	101 MARGUERITE/RTPOL	1440	54
USSC/TANYA TERRACE	3250023	LEXINGTON	G32222	C	101 MARGUERITE LFTPO	1600	54
AAA/ HILTON SOUND	3250024	LEXINGTON	G32225	C	L-SIDE OF HILTON SND	0	50
USSC/MILMONT SHORES	3250025	LEXINGTON	G32227	C	MILMONT SH/RGT.OF TK	480	57
USSC/MILMONT SHORES	3250025	LEXINGTON	G32210	C	RGT. 204 LAKESIDE DR	2130	57
USSC/MILMONT SHORES	3250025	LEXINGTON	G32226	C	RIGHT/MILMONT SH./TK	410	57
USSC/GLENN VILLAGE #1	3250026	LEXINGTON	G32914	C	Entrance LT Sandy Cr	142080	224
USSC/GLENN VILLAGE #1	3250026	LEXINGTON	G32857	C	END OF ARROWPOINT DR	17210	224
USSC/GLENN VILLAGE #1	3250026	LEXINGTON	G32228	C	BEHIND 3045 BACHMAN	13340	224
USSC/DUTCHMAN ACRES	3250028	LEXINGTON	G32233	C	RIGHT OF TANK	2350	59
USSC/DUTCHMAN ACRES	3250028	LEXINGTON	G32232	C	NEXT TO TANK	2465	59
USSC/BELLMEADE SD	3250031	LEXINGTON	G32241	C	BEHIND 134 MIRANDA	0	367
USSC/BELLMEADE SD	3250031	LEXINGTON	G32240	C	END OF KONICA/AT TNK	22730	367
RANCH LAKE ASSOCIATION	3250032	LEXINGTON	G32242	S	FRONT 107 RANCHLAKE	0	20
USSC/CHARWOOD S/D	3250035	LEXINGTON	G32249	C	BEHIND 412 CALCUTTA	22540	683
USSC/CHARWOOD S/D	3250035	LEXINGTON	G32248	C	BHND 3908 BACHMAN RD	41650	683
USSC/FOX TRAIL	3250038	LEXINGTON	G32253	C	RIDING FIELD&STEEPLE	3680	100
USSC/FOX TRAIL	3250038	LEXINGTON	G32254	C	STEEPLE CHASE/ FRICA	3310	100
CAROLINA WATER SERVICE INC	3250042	LEXINGTON	G32257	C	LFT REAR 400 MILLCRK	1390	154
CAROLINA WATER SERVICE INC	3250042	LEXINGTON	G32259	C	END OLDE PINE-RGT137	340	154

CAROLINA WATER SERVICE INC	3250042	LEXINGTON	G32256	C	NXT.TO 112 MILLCREEK	780	154
CAROLINA WATER SERVICE INC	3250042	LEXINGTON	G32258	C	END/STONESPR/NXT.137	6930	154
CWS PEACHTREE ACRES	3250045	LEXINGTON	G32261	C	NEXT/103 ELBERTA DR.	6110	138
CWS PEACHTREE ACRES	3250045	LEXINGTON	G32262	C	NEXT/104 ELBERTA DR.	4510	138
LAKE PRINCETON WATER CO	3250046	LEXINGTON	G32263	S	TRAIL MARK RD/E CHAT	0	17
LAKE PRINCETON WATER CO	3250046	LEXINGTON	G32264	S	E CHATEAU/S CHATEAU	0	17
SOUTHLAND UTILITIES INC	3250047	LEXINGTON	G32265	C	114 SEDGEWOOD/RGT.TK	10240	335
SOUTHLAND UTILITIES INC	3250047	LEXINGTON	G32266	C	114 SEGEWOOD/LFT.TK.	10900	335
USSC/LEXINGTON ESTATES	3250050	LEXINGTON	G32268	C	BESIDE 209 JUANITA	2830	394
USSC/LEXINGTON ESTATES	3250050	LEXINGTON	G32269	C	LFT.REAR 102 JUANITA	7310	394
USSC/LEXINGTON ESTATES	3250050	LEXINGTON	G32272	C	BEHIND AMER.LEGION	20920	394
USSC/LEXINGTON ESTATES	3250050	LEXINGTON	G32273	C	END/LEANING PINE TRA	14960	394
CWS INDIAN PINES	3250051	LEXINGTON	G32275	C	BEHND.TANK/133 PEBBL	1050	46
CWS INDIAN PINES	3250051	LEXINGTON	G32274	C	FRONT/TANK/133 PEBBL	2250	46
ACAPULCO USA	3250053	LEXINGTON	G32279	S	NEXT TO HOUSE	0	12
USSC/LAKE VILLAGE	3250054	LEXINGTON	G32280	C	AT TANK-LAKESHORE DR	4310	197
USSC/LAKE VILLAGE	3250054	LEXINGTON	G32759	C	WELL #6	5100	197
USSC/LAKE VILLAGE	3250054	LEXINGTON	G32637	C	RIGHT LAKESHORE-LEFT	580	197
USSC/LAKE VILLAGE	3250054	LEXINGTON	G32281	C	BEFORE TANK-LAKESHOR	820	197
ROCK ISLAND WATER WORKS	3250055	LEXINGTON	G32284	S	2920/2930 OLD LEX HW	960	14
USSC/WINDY HILL	3250057	LEXINGTON	G32285	C	NEXT/309 WHITE HORSE	22440	375
USSC/WINDY HILL	3250057	LEXINGTON	G32286	C	BESIDE 113 DAVID ST.	750	375
CWS GLENN VILLAGE II	3250058	LEXINGTON	G32288	C	BEHIND 127 STONEBRID	18220	600
CWS GLENN VILLAGE II	3250058	LEXINGTON	G32287	C	ACROSS /2117 GLEN RD	15960	600
SHADY ACRES	3250060	LEXINGTON	G32291	C	LEFTSIDE DALLAS/#464	0	73
CRYSTAL PINES	3250065	LEXINGTON	G32860	C	WELL #2	0	69
CRYSTAL PINES	3250065	LEXINGTON	G32301	C	ACR 142 TORREY PINE	0	69
CAROLINA WATER SERVICE INC	3250066	LEXINGTON	G32889	C	DIRT RD off Hiller 1	20730	367
CAROLINA WATER SERVICE INC	3250066	LEXINGTON	G32703	C	LEFTSIDE HILLER RD.	14950	367
CAROLINA WATER SERVICE INC	3250066	LEXINGTON	G32704	C	LEFTSIDE OF HILLER	8430	367
CAROLINA WATER SERVICE INC	3250066	LEXINGTON	G32890	C	DIRT RD off Hiller 2	0	367
USSC/LEXINGTON FARMS	3250069	LEXINGTON	G32308	C	END OF MACDERMAID CT	60	297
USSC/LEXINGTON FARMS	3250069	LEXINGTON	G32307	C	END OF IRBY CT./RGT.	24720	297
HALTIWANGER WATER SYSTEM	3250071	LEXINGTON	G32516	S	LEFT COUNTS FAIRY RD	0	18
USSC/HILTON PLACE	3250072	LEXINGTON	G32517	C	BHND.143 KILLIAN PT.	9000	70
CAROLINA WATER SERVICE INC	3250073	LEXINGTON	G32520	C	ACROSS RD ELEV.TANK	27770	510
CAROLINA WATER SERVICE INC	3250073	LEXINGTON	G32519	C	AT ELEVATED STORAGE	9110	510
AAA HUNTINGTON PARK	3250074	LEXINGTON	G32522	C	END OF HORRACE CT.	0	457
AAA HUNTINGTON PARK	3250074	LEXINGTON	G32521	C	LEFT 1257 NAZARETH	960	457
AAA HUNTINGTON PARK	3250074	LEXINGTON	G32523	C	BEHIND MAHOGANY RUN	11810	457
AAA HUNTINGTON PARK	3250074	LEXINGTON	G32672	C	WILLOW RIDGE	26470	457
AAA/ MILL POND	3250075	LEXINGTON	G32526	C	LEFTSIDE ON WANDO CR	2780	175
AAA/ MILL POND	3250075	LEXINGTON	G32524	C	1162 RBT.HENDRIX	17720	175
CAROLINA WATER SERVICE INC	3250076	LEXINGTON	G32527	C	ENTR. TO BARNACLE	3780	35
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32530	C	AT 11TH FAIRWAY	3640	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32674	C	Down dirt road	5220	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32673	C	Off road to tennis c	3020	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32675	C	NXT TO 500 HARBORVIE	1190	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32528	C	2nd well at tank Tim	9310	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32656	C	BENT OAK CT	3000	1866
AMICKS FERRY WATER SYSTEM	3250077	LEXINGTON	G32638	C	1ST WELL AT TANK	5160	1866
EMERALD SHORES	3250088	LEXINGTON	G32661	C	RIGHT OF ENTR. @ TNK	0	49
EMERALD SHORES	3250088	LEXINGTON	G32662	C	RIGHTSIDE OF ENTRANC	0	49
AAA/ SOUTHERN PINES ESTATES	3250093	LEXINGTON	G32709	C	WELL #1	0	15
AAA/ IRONSTONE SD	3250096	LEXINGTON	G32754	C	WELL #1	12144	100
WILD MEADOWS S/D	3250097	LEXINGTON	G32780	C	WELL #2	87870	878
WILD MEADOWS S/D	3250097	LEXINGTON	G32756	C	WELL #1	16820	878
ROCKFORD PLACE@ CHARWOOD	3250099	LEXINGTON	G32783	C	WELL #1	11940	20
ROCKFORD PLACE@ CHARWOOD	3250099	LEXINGTON	G32901	C	Clubhouse Dr	0	20
BARCO ESTATES	3250100	LEXINGTON	G32800	S	WELL TWO	0	19

BARCO ESTATES	3250100	LEXINGTON	G32799	S	WELL ONE	0	19
AAA/ SHEALY ESTATES	3250102	LEXINGTON	G32840	C	WELL #1	0	2
USSC THE ESTATES @ HILTON	3250103	LEXINGTON	G32867	C	ACR 129 HILTON VIEW	6380	54
AAA/ CHASEHUNT FARMS	3250104	LEXINGTON	G32886	C	LEFT OF CHASEHUNT DR	0	80
ANDERSON MHP	3260001	LEXINGTON	G32533	S	RIGHT FRONT PARK ENT	0	15
MINERAL SPRINGS MHP	3260002	LEXINGTON	G32535	C	LOT 1 BY TANK	0	56
MINERAL SPRINGS MHP	3260002	LEXINGTON	G32536	C	20FT.FROM TANK LOT 1	0	56
JACKSON MHP	3260005	LEXINGTON	G32311	C	SIDE OF HOUSE	0	100
JACKSON MHP	3260005	LEXINGTON	G32310	C	NEXT TO LOT # 2	0	100
ITP INC	3260008	LEXINGTON	G32313	S	BEHIND HOUSE	0	12
ARDIS MOBILE HOME PARK - LEXINGTON	3260011	LEXINGTON	G32314	S	ENTRANCE TO MHP	0	24
USSC SANGAREE MHP	3260012	LEXINGTON	G32315	C	BEHIND 211 SANGAREE	7970	176
GREEN VALLEY MHP	3260019	LEXINGTON	G32324	S	RIGHT OF DRIVEWAY	0	21
SILVER LAKE MHP	3260022	LEXINGTON	G32335	C	ACROSS FROM LOT 103	0	122
SILVER LAKE MHP	3260022	LEXINGTON	G32328	C	LOT OF TRAIL.LOT15	0	122
JESSIMINE MHP	3260024	LEXINGTON	G32389	S	FRONT OF HOUSE	0	5
ROLLING MEADOWS MHP	3260027	LEXINGTON	G32336	C	REAR OF PARK AT TANK	380	780
ROLLING MEADOWS MHP	3260027	LEXINGTON	G32788	C	Left of trailer 154	69180	780
TRIPLE ACRES MHP #2	3260029	LEXINGTON	G32920	C	Middle of MHP on lef	0	29
TRIPLE ACRES MHP #2	3260029	LEXINGTON	G32337	C	REAR BY TANK	0	29
BIG COUNTRY MHP	3260037	LEXINGTON	G32346	S	FRONT OF OWNERS HOME	0	10
HALTERS MHP	3260042	LEXINGTON	G32357	C	LEFT REAR 441 DUNBAR	0	14
JAKES LANDING LLC	3260048	LEXINGTON	G32362	C	LOT C-20	0	79
JAKES LANDING LLC	3260048	LEXINGTON	G32361	C	LOT A-10	0	79
TRIPLE ACRES MHP #1	3260049	LEXINGTON	G32364	C	BEHIND MAILBOXES/RGT	0	38
TRIPLE ACRES MHP #1	3260049	LEXINGTON	G32363	C	BEHIND TANK LEFTSIDE	0	38
MILLS MHP 1&2	3260050	LEXINGTON	G32365	C	ENTRANCE OF LOT 12	0	30
MCGREGOR DOWNS MHP	3260059	LEXINGTON	G32369	C	LOC: AT TANK	0	626
MCGREGOR DOWNS MHP	3260059	LEXINGTON	G32370	C	LOC: LOT # 12	0	626
LINDLER'S MHP	3260060	LEXINGTON	G32371	S	CENTER OF PARK	0	20
RED OAK MHP	3260064	LEXINGTON	G32375	C	LEFT REAR OF PARK	0	150
RED OAK MHP	3260064	LEXINGTON	G32374	C	PARK ENTRANCE AT TNK	0	150
GREENWOOD MHP	3260067	LEXINGTON	G32378	C	NEXT TO LOT 8	0	19
PEEKS MHP	3260068	LEXINGTON	G32379	S	LOT # 1	0	19
PEEKS MHP	3260068	LEXINGTON	G32776	S	LOT #1	0	19
BERRYS MHP	3260073	LEXINGTON	G32382	S	RIGHTSIDE DRIVEWAY	0	11
RON'S MHP	3260078	LEXINGTON	G32383	S	BEHIND STORE	0	16
MAC'S MHP	3260079	LEXINGTON	G32384	S	REAR PARK AT TANK	0	5
CRESTHAVEN MHP II	3260081	LEXINGTON	G32387	C	5 SCENIC DRIVE	0	23
BOOTHS MHP	3260083	LEXINGTON	G32388	S	LOT 10 FRONT OF PARK	0	10
WESSINGER'S MHP	3260084	LEXINGTON	G32390	S	LOT 1010-4	0	10
HALTER ACRES MHP	3260090	LEXINGTON	G32393	C	AT MH# 433 TABOR DR.	0	90
HALTER ACRES MHP	3260090	LEXINGTON	G32392	C	AT MH# 323 ON TABOR	0	90
GEORGE WILLIAMS MHP	3260091	LEXINGTON	G32394	S	REAR OF 1898 PINE ST	0	9
CRAFTVILLE MHP	3260092	LEXINGTON	G32395	S	BEHIND HOUSE	0	20
AIRPORT MHP	3260094	LEXINGTON	G32398	S	REAR OF PARK LT12	0	14
AIRPORT MHP	3260094	LEXINGTON	G32397	S	AT FRONT OF PARK	0	14
GLENDALE ESTATES	3260103	LEXINGTON	G32402	C	BETWEEN LOTS 11 & 12	0	35
GLENDALE ESTATES	3260103	LEXINGTON	G32403	C	50FT.FRONT OF TANK	0	35
HILLVIEW MHP	3260104	LEXINGTON	G32404	C	LEFT/10,000 GAL TANK	0	80
HILLVIEW MHP	3260104	LEXINGTON	G32405	C	RIGHT/10000 GAL TANK	0	80
MADISON MHP	3260106	LEXINGTON	G32408	S	RIGHT FRONT DRIVEWAY	0	10
TOPAZ MHP	3260108	LEXINGTON	G32409	S	BTWN TANKS & PARK	0	19
TOPAZ MHP	3260108	LEXINGTON	G32410	S	INSIDE NEXT TO TANKS	0	19
CARMEL ACRES	3260110	LEXINGTON	G32411	S	WELL ACROSS RD.	5760000	19
ELLISOR MHP	3260113	LEXINGTON	G32415	S	205 VONDA DRIVE	1056000	11
GOODWIN PROPERTIES	3260114	LEXINGTON	G32416	S	BACK OF HOUSE	0	19
GOODWIN PROPERTIES	3260114	LEXINGTON	G32417	S	LEFT SIDE OF DR-WAY	0	19
HICKORY HILL MHP	3260115	LEXINGTON	G32418	C	FRONT OF LOT B-1	0	68
HICKORY HILL MHP	3260115	LEXINGTON	G32419	C	BETWEEN LOT 4A & 5A	0	68

CROSSONHILL MHP	3260116	LEXINGTON	G32420	S	FRONT OF PARK	0	21
WINGARD'S MHP	3260117	LEXINGTON	G32421	S	REAR OF PARK	0	23
RIDGELL MHP	3260119	LEXINGTON	G32425	S	LEFT OF ENTRANCE	0	16
SYCAMORE TREE MHP	3260121	LEXINGTON	G32426	S	BEHIND 2nd MH.ON LFT	0	21
SYCAMORE TREE MHP	3260121	LEXINGTON	G32427	S	BACK OF PARK	0	21
SUMMER OAKS	3260123	LEXINGTON	G32429	S	121 BELL STREET	0	22
DOUBLE A MHP	3260126	LEXINGTON	G32541	S	LEFT REAR OF PARK	0	23
HIDEAWAY MHP	3260127	LEXINGTON	G32543	C	BEHIND LOT D	0	35
HIDEAWAY MHP	3260127	LEXINGTON	G32542	C	AT UPRIGHT TANK	0	35
SPARKELBERRY MHP	3260128	LEXINGTON	G32544	S	FRONT OF ENTRANCE	0	11
GATE OAK GROVE MHP	3260129	LEXINGTON	G32545	S	END OF TREEMOUNT LN.	0	12
KYZER MHP	3260130	LEXINGTON	G32546	S	BEHIND STORE ON RGHT	0	10
PONDAROSA MHP	3260131	LEXINGTON	G32547	S	BEHIND LOT 8	0	11
CHAPPEL MHP	3260132	LEXINGTON	G32549	C	NEXT TO HOUSE	0	45
CHAPPEL MHP	3260132	LEXINGTON	G32548	C	NEXT TO LOT 118 SANA	0	45
ANNS MHP	3260135	LEXINGTON	G32553	S	BEHIND LOT # 6	0	5
HAR-MEL MHP	3260136	LEXINGTON	G32554	S	LEFT SIDE ENTRANCE	0	18
POSTON MHP	3260137	LEXINGTON	G32555	S	RIGHT REAR OF LOT	0	15
L&J'S MHP	3260138	LEXINGTON	G32557	C	BEHIND WELL ONE	0	90
REGENCY SQUARE 1	3260139	LEXINGTON	G32558	S	END OF PARK	0	24
HIDDEN OAKS MHP	3260140	LEXINGTON	G32559	C	LEFT FRONT OF PARK	0	27
DIMERY MHP	3260142	LEXINGTON	G32560	S	BEHIND HOUSE	0	6
BANNISTERS MHP	3260143	LEXINGTON	G32561	S	REAR OF PARK	0	17
FOUR ACRES MHP	3260144	LEXINGTON	G32562	S	LEFTSIDE OF DR-WAY	0	15
PINE FOREST MHP	3260145	LEXINGTON	G32563	S	RIGHT REAR OF PARK	0	8
ROLLING HILLS MHP	3260146	LEXINGTON	G32565	S	CLOSEST TO HOUSE	0	22
PLEASANT RIDGE MHP	3260147	LEXINGTON	G32566	C	REAR-PARK/BHD.TANK	0	22
PLEASANT RIDGE MHP	3260147	LEXINGTON	G32567	C	REAR PARK/FRONT-TANK	0	22
COUNTRY MANOR MHP	3260148	LEXINGTON	G32568	S	BEHIND LAST MH./LEFT	0	14
BIG D MHP	3260150	LEXINGTON	G32570	S	LEFT FRONT OF PARK	0	24
BIG D MHP	3260150	LEXINGTON	G32866	S	RIGHT SIDE OF TANK	0	24
COUNTRY QUARTERS LLC	3260151	LEXINGTON	G32572	S	REAR OF PARK	0	17
COUNTRY QUARTERS LLC	3260151	LEXINGTON	G32571	S	LEFT REAR AT TANK	0	17
SANDY SPRINGS MHP	3260152	LEXINGTON	G32573	S	BETWEEN LOTS 2 & 3	0	21
LEITNER'S MHP	3260153	LEXINGTON	G32778	S	WELL #3	0	12
CRAPPS MHP	3260156	LEXINGTON	G32579	S	BHND.HM.BEFORE PARK	0	19
CRAPPS MHP	3260156	LEXINGTON	G32578	S	AT TANK IN PARK	0	19
MHP HOLDINGS LLC	3260157	LEXINGTON	G32581	C	BY LOT 153	0	202
MHP HOLDINGS LLC	3260157	LEXINGTON	G32582	C	AT LOT 245	0	202
S&S JOHNSON MHP	3260158	LEXINGTON	G32583	S	LEFT SIDE OF HOUSE	0	18
BRENTWOOD MHP	3260159	LEXINGTON	G32584	S	RIGHT REAR OF PARK	0	23
CIMMARRON MHP	3260161	LEXINGTON	G32657	S	RIGHT ENTR.CHURCH ST	0	16
BASIN ROCK MHP	3260164	LEXINGTON	G32431	C	200YD BEHIND LT 1224	0	190
BASIN ROCK MHP	3260164	LEXINGTON	G32432	C	L-SIDE OF RD AT TANK	0	190
SOUTH OAK MHP	3260165	LEXINGTON	G32433	S	REAR OF PARK ON RT	0	19
MCCARTER'S	3260166	LEXINGTON	G32434	S	BEHIND LOT # 1	0	11
FLORENCE MHP	3260168	LEXINGTON	G32436	S	RIGHT REAR OF HOUSE	0	9
REGENCY SQUARE 2	3260170	LEXINGTON	G32438	C	RIGHT OF GATE	0	89
REGENCY SQUARE 2	3260170	LEXINGTON	G32437	C	WELL AT POWER POLE	0	89
CIERA MHP	3260171	LEXINGTON	G32439	C	BEHIND METAL BLDG.	0	21
PEELE'S MHP	3260172	LEXINGTON	G32440	S	LEFT FRONT	0	12
CEDAR PARK	3260173	LEXINGTON	G32441	S	LEFT REAR OF PARK	0	14
WINGARDS MHP #2	3260174	LEXINGTON	G32442	C	LEFT FRONT OF PARK	0	26
VILLAGE MOBILE HOME PARK	3260176	LEXINGTON	G32774	S	BACK OF MHP LT	0	19
LYNNFIELD ESTATES	3260179	LEXINGTON	G32447	S	REAR OF PARK	0	23
MILLS MHP #3	3260180	LEXINGTON	G32448	S	AT STORAGE LOT	0	23
MIDLAND HILLS MHP	3260182	LEXINGTON	G32453	C	RIGHT FRONT OF PARK	0	66
HARD KNOX MHP	3260183	LEXINGTON	G32454	C	BEHIND LOT	0	43
PINE STRAW MHP	3260186	LEXINGTON	G32592	S	NEXT TO POWER POLE	0	21
PINE STRAW MHP	3260186	LEXINGTON	G32591	S	NEXT TO STOR. TANK	0	21

COUNTRY PARK	3260187	LEXINGTON	G32593	C	NEXT TO STORAGE TANK	0	36
COUNTRY PARK	3260187	LEXINGTON	G32594	C	NEXT TO GATE	0	36
HIGHLAND ACRES MHP	3260188	LEXINGTON	G32595	S	BACK OF LOT 15	0	7
HERMITAGE PARK INC	3260189	LEXINGTON	G32596	C	BACK OF PARK BY TANK	0	100
LUKE ROLAND MHP	3260190	LEXINGTON	G32597	S	164 BENJAMIN DR.#1	0	14
HWY #3 MHP	3260191	LEXINGTON	G32599	C	RIGHT REAR OF PARK	0	35
H & H MHP	3260192	LEXINGTON	G32601	S	RIGHT REAR OF TANK	0	20
MCCARTHY MHP	3260193	LEXINGTON	G32602	S	END OF ENTRANCE	0	18
MCCARTHY MHP	3260193	LEXINGTON	G32603	S	RIGHT OF WELL ONE	0	18
COOPER COURT MHP	3260197	LEXINGTON	G32607	S	LEFT REAR OF MHP	0	10
PLEASANT'S MHP	3260199	LEXINGTON	G32609	S	REAR OF MH. # 4124	0	15
SOUTHERN PINES	3260200	LEXINGTON	G32610	S	LEFT FRONT OF PARK	0	20
TOWN & COUNTRY ESTATES MHP	3260203	LEXINGTON	G32706	S	BHND 4138 GREENWOOD	0	12
SOUTH OAK MHP #2	3260204	LEXINGTON	G32713	S	REAR OF PARK ON LEFT	0	23
PUTTS MHP	3260205	LEXINGTON	G32720	S	LEFT REAR OF PARK	0	24
FARMBROOK MHP	3260206	LEXINGTON	G32728	S	WELL # 1	0	24
HIDDEN ACRES MHP	3260207	LEXINGTON	G32729	C	WELL # 1	0	71
HIDDEN ACRES MHP	3260207	LEXINGTON	G32839	C	SIDE OF HOUSE	0	71
GARY'S MHP	3260208	LEXINGTON	G32731	S	WELL # 2	0	14
GARY'S MHP	3260208	LEXINGTON	G32730	S	WELL # 1	0	14
BECKMAN MHP	3260211	LEXINGTON	G32781	S	RT FRONT PARK	0	11
W&B INVESTMENTS LLC	3260214	LEXINGTON	G32810	S	BTWN 123&125 HARRIS	0	10
FRANK HALACKA MHP	3260215	LEXINGTON	G32811	S	FRONT OF PARK	0	10
BEL AIR MOBILE HOME PARK WEST COLUMBIA	3260217	LEXINGTON	G32821	S	LEFT FRONT OF 1ST LT	0	24
RAMSEY MHP	3260218	LEXINGTON	G32827	S	WELL ONE	0	6
BLIGHT'S MHP	3260219	LEXINGTON	G32833	S	BTWN LOT C & LOT B	0	2
J L JOHNSON MHP #1	3260220	LEXINGTON	G32842	S	NXT TO 311 ROLAND DR	0	10
NEESE'S MHP	3260221	LEXINGTON	G32386	S	WELL AT HOUSE	0	11
J L JOHNSON MHP #2	3260222	LEXINGTON	G32848	S	320 ROLAND DR	0	21
OPEN ARMS COMMUNITY CARE CTR	3270007	LEXINGTON	G32459	S	LEFT FRONT OF BLDG.	0	15
CEDAR ACRES INC	3270010	LEXINGTON	G32461	P	REAR OF BLDG.	0	40
RAPHA RESIDENTIAL CARE	3270011	LEXINGTON	G32654	C	RIGHT SIDE /PARKING	7180	69
A MOTHER'S PRAYER DAY CARE	3270123	LEXINGTON	G32696	S	RIGHT REAR OF LOT	19200	18
OLLIE MITCHELL DAY CARE	3270126	LEXINGTON	G32711	S	WELL ONE	0	13
FISHERMANS WHARF	3270200	LEXINGTON	G32472	N	RIGHT REAR OF BLDG.	0	81
MIDSTATE AUTO AUCTION	3270206	LEXINGTON	G32474	N	RIGHT FRONT NEXT/BLD	0	150
CONGAREE DAIRY	3270207	LEXINGTON	G32475	N	BEHIND NEXT TO BLDG.	0	75
O'CAIN ADVERTISING	3270235	LEXINGTON	G32614	S	BETWEEN BLDG&HWY 48	0	9
LAKE LODGE APARTMENTS	3270301	LEXINGTON	G32617	C	FRONT OF COUNTRY APT	0	130
LAKE LODGE APARTMENTS	3270301	LEXINGTON	G32618	C	BETWEEN LOTS 30 & 31	0	130
TWELVE MILE CR	3270303	LEXINGTON	G32622	S	ACROSS FIELD BY MH.	0	20
BOARDWALK VILLA	3270304	LEXINGTON	G32623	C	ENTR.BOARDWALK VILLA	0	104
GIRL SCOUT COUNCIL OF THE CONGAREE #1	3270677	LEXINGTON	G32628	N	RIGHT OF DRIVEWAY -	0	64
GIRL SCOUT COUNCIL OF THE CONGAREE #1	3270677	LEXINGTON	G32871	N	BEHIND TANK HOUSE	0	64
COLUMBIA SC YOUNG MENS CHRISTIAN ASSOCIATION	3270678	LEXINGTON	G32630	N	LFT.DRIVEWAY TO OFF.	0	25
COLUMBIA SC YOUNG MENS CHRISTIAN ASSOCIATION	3270678	LEXINGTON	G32631	N	BEHIND BATH HOUSE	0	25
CAMP KINARD	3270680	LEXINGTON	G32634	N	BEHIND OFF.AT 5000TK	0	78
CAMP KINARD	3270680	LEXINGTON	G32633	N	RGHT.OF DINNING HALL	0	78
GIRL SCOUT COUNCIL OF THE CONGAREE #2	3270685	LEXINGTON	G32872	N	BESIDE STAFF HOUSE	0	125
GIRL SCOUT COUNCIL OF THE CONGAREE #2	3270685	LEXINGTON	G32484	N	BEHIND DINING HALL	0	125
GIRL SCOUT COUNCIL OF THE CONGAREE #3	3270686	LEXINGTON	G32485	N	BEHIND DAVIS COTTAGE	0	16
ADAMS LAKE CAMPGROUND	3270801	LEXINGTON	G32486	S	RIGHTSIDE OF ENTR.	0	26
SIESTA COVE CAMPGROUND	3270802	LEXINGTON	G32666	N	ACROSS RD SWIM POOL	0	22
RIVER BOTTOM VENTURES LLC	3270803	LEXINGTON	G32880	N	TO LEFT REAR OF PROP	0	50
PUTNAM'S CAMPGROUND & MARINE REPAIR INC	3270850	LEXINGTON	G32487	N	1176 PUTNAM/BY TANK	0	40
SOUTHSIDE MARINA	3270851	LEXINGTON	G32775	S	WELL #1	0	26
HIDDEN VALLEY CC	3270875	LEXINGTON	G32489	N	LEFT REAR OF BLDG.	0	70
COLDSTREAM COUNTRY CLUB	3270877	LEXINGTON	G32492	N	LEFT OF # 10 TEE	0	50
COLDSTREAM COUNTRY CLUB	3270877	LEXINGTON	G32491	N	BEHIND SWIMMING POOL	0	50
COOPER CREEK CO	3270878	LEXINGTON	G32493	N	FRONT OF CLUB HOUSE	0	65

CHARLES & GENE HENDRIX	3270901	LEXINGTON	G32495	S	RIGHT REAR OF BLDG.	0	12
WE CARE	3270903	LEXINGTON	G32891	S	TO RIGHT OF DRIVEWAY	0	8
COUNTRY KENNELS	3270904	LEXINGTON	G32895	S	LEFT OF 1ST DW&HOUSE	0	2
LEXINGTON COUNTY RECREATION & AGING COMMISSION	3270906	LEXINGTON	G32644	N	BETWEEN BALL FIELDS	0	25
LEXINGTON COUNTY RECREATION & AGING COMMISSION	3270906	LEXINGTON	G32463	N	BY CANTEEN	0	25
LEXINGTON COUNTY	3270907	LEXINGTON	G32480	N	RIGHT FRONT OF BLDG.	0	26
CEDAR CREEK PARK	3270909	LEXINGTON	G32705	S	LEFT OF CLUBHOUSE	0	15
TOWN & COUNTRY STORE	3270911	LEXINGTON	G32707	S	600 FT BEHIND STORE	0	2
ELEC COOP OF SC	3270912	LEXINGTON	G32712	S	LEFT REAR POLE FIELD	0	24
ACCURATE PRINTING	3270913	LEXINGTON	G32719	S	BEHIND BLDG	0	1
OAKWOOD PRODUCTS INC	3270914	LEXINGTON	G32721	S	LEFT OF BLDG	0	12
HOOK PROPERTY	3270917	LEXINGTON	G32741	S	WELL #1	0	3
CAMP AGAPE	3270918	LEXINGTON	G32744	S	6952 FAIRVIEW RD	0	100
HAWORTH REALTY	3270921	LEXINGTON	G32753	S	WELL #1	0	14
KYZER	3270922	LEXINGTON	G32893	S	REAR OF BUILDING	0	8
LEXINGTON COUNTY LANDFILL	3270924	LEXINGTON	G32758	S	WELL #1	0	20
MR B'S III	3270925	LEXINGTON	G32761	N	5345 FAIRVIEW ROAD	0	26
CROSSROADS FIRE STATION	3270929	LEXINGTON	G32767	S	RT REAR OF BLDG	0	3
A&B CERAMICS INC	3270931	LEXINGTON	G32769	S	WELL #1	0	5
WINTERGREEN WOODS INC	3270932	LEXINGTON	G32770	N	WELL #1	0	26
LEXINGTON COUNTY EDMUND TRANSFER	3270934	LEXINGTON	G32772	S	WELL #1	0	3
BEN W SATCHER-COMMER DEV	3270935	LEXINGTON	G32773	S	WELL #1	0	15
SHOPS OF HORSE CREEK	3270936	LEXINGTON	G32777	N	WELL #1	0	24
LEXINGTON COUNTY SCHOOL DISTRICT 2	3270938	LEXINGTON	G32785	S	WELL #1	0	5
LAKE MURRAY GROOMING PAR	3270939	LEXINGTON	G32786	S	WELL ONE	0	10
SWANSEA PARK	3270941	LEXINGTON	G32791	N	WELL ONE	0	25
PELION COLLECTION STATION	3270943	LEXINGTON	G32793	S	WELL ONE	0	4
BAILEY CONVENIENCE STATION	3270944	LEXINGTON	G32794	S	WELL ONE	0	4
OLD BUSH RIVER RD CON ST	3270945	LEXINGTON	G32795	S	WELL ONE	0	4
CHAPIN COLLECTION STATION	3270946	LEXINGTON	G32796	S	WELL ONE	0	4
EDMUND CONVENIENCE STAT	3270947	LEXINGTON	G32797	S	WELL ONE	0	4
SANTEE COOPER COLA SUBST	3270948	LEXINGTON	G32798	S	WELL #1	0	5
PIT STOP #36	3270949	LEXINGTON	G32801	N	WELL ONE	0	25
HORSENECK COMM CENTER	3270950	LEXINGTON	G32802	S	WELL ONE	0	50
CENTER OF CHANGE	3270951	LEXINGTON	G32812	S	1228 MAIN ST SO CONG	0	10
MID CAROLINA CONTRACTING	3270952	LEXINGTON	G32816	S	WELL ONE	0	6
LIVE OAKS INC	3270954	LEXINGTON	G32818	S	WELL #1	0	5
NETTLES, JAMES L	3270955	LEXINGTON	G32819	S	WELL ONE	0	4
PADGETT'S GROCERY	3270956	LEXINGTON	G32820	N	WELL ONE	0	25
SISSY'S FURNITURE	3270957	LEXINGTON	G32822	S	WELL #1	0	10
EDMUND FLEA MARKET	3270958	LEXINGTON	G32823	N	WELL #1	0	200
USF HOLLAND INC	3270959	LEXINGTON	G32824	N	NEXT TO PARKING LOT	0	26
B&M GROCERY	3270961	LEXINGTON	G32828	N	WELL ONE	0	26
DEPOT BUILDING SUPPLY	3270962	LEXINGTON	G32829	N	WELL ONE	0	22
HILL VIEW	3270963	LEXINGTON	G32830	S	WELL #1	0	24
SOUTHERN QUALITY EQUIPCO	3270964	LEXINGTON	G32835	S	LEFT OF MAIN OFFICE	0	10
SOUTHEASTERN ASSOCIATES	3270965	LEXINGTON	G32836	S	LEFT OF DRIVEWAY	0	2
FAIRVIEW FIRE STATION	3270966	LEXINGTON	G32837	S	RIGHT OF BUILDING	0	15
HEAVY EQUIPMENT REPAIRS LLC	3270968	LEXINGTON	G32841	S	WELL #1	0	6
HARMON TREE FARM	3270969	LEXINGTON	G32844	S	IN FRONT OF BARN	0	20
MIDLANDS GOSPEL SINGING	3270970	LEXINGTON	G32845	S	RIGHT OF DRIVEWAY	0	7
LEXINGTON REPO CENTER	3270971	LEXINGTON	G32847	S	WELL #1	0	2
PET-A-COAT JUNCTION	3270973	LEXINGTON	G32849	S	REAR OF BUILDING	0	3
SWANSEA HARDWARE	3270974	LEXINGTON	G32850	S	REAR OF BUILDING(RT)	0	4
PANTRY 3272	3270976	LEXINGTON	G32853	N	WELL #1	0	26
DAVE'S HEATING & AIR	3270977	LEXINGTON	G32854	S	WELL #1	0	5
KNIGHT ENTERPRISE	3270978	LEXINGTON	G32855	S	WELL #1	0	5
WALTER P RAWL & SONS INC	3270979	LEXINGTON	G32856	S	METAL SHED	0	24
I 20 SPEEDWAY INC	3270980	LEXINGTON	G32858	N	WELL #1	0	24
ULTIMATE SIGNS	3270981	LEXINGTON	G32861	S	WELL #1	0	3

SERVE CLEAN LLC	3270982	LEXINGTON	G32863	S	WELL #1	0	5
LEXINGTON PET LODGE	3270983	LEXINGTON	G32865	S	WELL #1	0	4
BLACKMON WAREHOUSE	3270984	LEXINGTON	G32892	S	RIGHT REAR OF BLDG	0	0
AAA WELL DRILLING OFFICE	3270986	LEXINGTON	G32869	S	WELL #1	0	8
CAROLINA CUSTOM TRIM	3270987	LEXINGTON	G32870	S	WELL #1	0	4
PARTIES TO GO	3270989	LEXINGTON	G32875	S	REAR OF 210 SHUMPERT	0	2
LAKE MURRAY LAW ENFORCEMENT CENTER	3270990	LEXINGTON	G32876	S	FRONT OF BLDG	0	6
SAMARIA FIRE STATION	3270991	LEXINGTON	G32877	S	TO REAR OF FIRE STA	0	6
CAROLINA PET RESORT	3270993	LEXINGTON	G32881	S	LEFT FRONT OF BLDG	0	3
RICHEY' S SERVICES	3270994	LEXINGTON	G32882	S	LEFT OF BUILDING	0	2
POND BRANCH DEPOT	3270996	LEXINGTON	G32884	S	IN FRONT OF BLDG	0	1
LINGENFELTER ROBERT	3270997	LEXINGTON	G32885	S	966 DRAWDEBIL RD	0	5
ILJ PROPERTIES	3270998	LEXINGTON	G32887	S	BHND BLDG LEFT CORNR	0	5
LEXINGTON PAINT & SUPPLY	3270999	LEXINGTON	G32888	S	2672 AUGUSTA HWY	0	1
CLINTON SEASE FARM	3271000	LEXINGTON	G32734	S	326 OLDE FARM RD	0	14
WALTER K HOOK FARMS	3271002	LEXINGTON	G32738	S	WELL # 1	0	15
CLAYTON RAWL FARMS INC	3271003	LEXINGTON	G32915	S	Behind living quarte	0	15
CROSSROADS CAFE	3272004	LEXINGTON	G32859	N	WELL #1	0	8
STONES UPHOLSTERY	3279000	LEXINGTON	G32896	S	BEHIND BLDG	0	1
CMC METALS RECYCLING	3279001	LEXINGTON	G32899	S	~ 100 ft behind offl	0	9
DOLLAR GENERAL-SOUTH CONGAREE	3279002	LEXINGTON	G32900	N		0	
DOLLAR GENERAL-SOUTH CONGAREE	3279002	LEXINGTON	G32900	N		0	
LAZY 8	3279003	LEXINGTON	G32902	N	Behind Store	0	26
PELION CHILD CARE	3279004	LEXINGTON	G32903	S	Rear of house	0	7
FRAZIER CATERING	3279005	LEXINGTON	G32904	S	Behind house	0	6
KEISLER STORE	3279006	LEXINGTON	G32905	N	Behind trailer-behin	0	26
MJ S COUNTRY STOP	3279007	LEXINGTON	G32906	N	Rear left of bldg; a	0	26
VILLAGE STORE	3279008	LEXINGTON	G32907	N	Behind store	0	26
TINA S CAKE HOUSE	3279009	LEXINGTON	G32908	S	Behind house	0	6
STURKIE BROTHERS	3279010	LEXINGTON	G32909	S	Left of building	0	2
RED STARR SELF STORAGE & 378 FOOD MART	3279011	LEXINGTON	G32911	N	Rear of storage bull	0	26
B&T SAND COMPANY INC	3279012	LEXINGTON	G32910	S	In front of scale of	0	4
RUSH TOWING AND RECOVERY	3279013	LEXINGTON	G32913	S	Behind warehouse	0	3
MR J S LLC	3279014	LEXINGTON	G32917	N	Front rt. corner	0	27
TAYLOR, FRANK	3279015	LEXINGTON	G32919	N	Rt. side of building	0	26
PROSPERITY TOWN OF	3610005	NEWBERRY	G36103	C	HWY 76-PROSPERITY PK	21420	1347
PROSPERITY TOWN OF	3610005	NEWBERRY	G36107	C	HWY 76- MILLS CLINIC	19220	1347
PROSPERITY TOWN OF	3610005	NEWBERRY	G36105	C	LANGFORD ST.(OFF 76)	17720	1347
SANTEE COOPER NEWBERRY	3630003	NEWBERRY	G36167	S	WELL #1	0	5
DOWDS BAR-B-Q	3630801	NEWBERRY	G36120	N	LEFT OF HOUSE	0	26
MEADOW RIDGE S/D	3650013	NEWBERRY	G36162	S	OFF SCURRY CHURCH RD	0	9
NEWBERRY PARK ESTATES	3660003	NEWBERRY	G36125	S	LEFT REAR OF PARK	0	16
GATEWAY MHP	3660006	NEWBERRY	G36130	S	BY LOT #30	0	11
GATEWAY MHP	3660006	NEWBERRY	G36129	S	ACROSS RD FROM HOUSE	0	11
GATEWAY MHP	3660006	NEWBERRY	G36127	S	BEHIND BARBER SHOP	0	11
GATEWAY MHP	3660006	NEWBERRY	G36128	S	BY STORAGE SHED	0	11
SALUDA RIVER MHP	3660009	NEWBERRY	G36131	S	LEFT SIDE PARK ENTR.	0	24
WEBER MHP	3660010	NEWBERRY	G36134	S	RIGHTSIDE DR-WAY/TNK	0	22
METTS MHP	3660013	NEWBERRY	G36135	S	BETWEEN DR-WAY & RD.	0	18
WHITES MHP	3660014	NEWBERRY	G36136	C	R. SIDE RD AT TANK	2020	265
WHITES MHP	3660014	NEWBERRY	G36160	C	WELL #4	4930	265
WAY MHP	3660015	NEWBERRY	G36163	S	WELL #1	0	22
CEDAR LANE MOBILE ESTATES	3660016	NEWBERRY	G36177	S	REAR LEFT OF PROPERT	0	24
QUAKER MANOR	3660017	NEWBERRY	G36179	S	LEFT OF QUAKER MANOR	0	24
BOYS FARM INC	3670108	NEWBERRY	G36138	C	ACROSS FROM GYM	0	40
LIVINGSTON DAYCARE	3670109	NEWBERRY	G36162	S	LEFT OF HOUSE	0	15
M AND N CAFE	3670211	NEWBERRY	G36155	N	RIGHT OF RESTAURANT	0	40
SALUDA RIVER RESORT	3670800	NEWBERRY	G36151	N	WELL BEHIND OFFICE	0	1
SALUDA RIVER RESORT	3670800	NEWBERRY	G36150	N	NEXT TO PICNIC SHELT	0	1
H J SMITH PROPERTIES	3670903	NEWBERRY	G36172	N	BEHIND PHARMACY	0	25

THREE B CORNER	3670904	NEWBERRY	G36169	N	RIGHT SIDE OF STORE	0	25
NEWBERRY COUNTY COLLECTION CENTER	3670906	NEWBERRY	G36171	S	WELL #1	0	1
BEAL LUMBER CO INC	3670907	NEWBERRY	G36173	S	REAR LFT OF MAIN BLD	0	22
STONEY HILL RECYCLING CENTER	3670908	NEWBERRY	G36174	S	WELL #1	0	1
BROAD RIVER RECYCLING CENTER	3670909	NEWBERRY	G36176	S	Middle of facility	0	1
EDCON INC	3670910	NEWBERRY	G36178	S	FRONT LEFT OF BLDG	0	1
POMARIA SWITCHING STATION	3670911	NEWBERRY	G36180	S	Left front of substa	0	2
BUSH RIVER JERSEYS	3670912	NEWBERRY	G36181	N	At turkey farm	0	26
RIVERWINDS LANDING INC	3670913	NEWBERRY	G36182	N	Right of driveway	0	26
EDGE PREP INC	3670914	NEWBERRY	G36184	S	Left of shop behind	0	3
BEAL LUMBER OFFICE	3670915	NEWBERRY	G32912	S	Right rear of the of	0	10
BO'S	3672003	NEWBERRY	G36175	N	WELL #1	0	5
BERLEY TAKE OUT RESTAURANT	3672004	NEWBERRY	G36183	N	Right of building	0	25
RIDGE SPRING TOWN OF	4110002	SALUDA	G41103	C	EAST OF RAILROAD ST.	41630	832
INTERNATIONAL PAPER JOHNSTON PLT	4130002	SALUDA	G41189	P	BOILER	0	60
INTERNATIONAL PAPER JOHNSTON PLT	4130002	SALUDA	G41175	P	WELL #2	0	60
BLACKSGATE WEST	4150004	SALUDA	G41118	N	LOT 21 BLACKSGATE	0	14
BLACKSGATE EAST	4150005	SALUDA	G41119	N	LOT 52/BLACKSGATE	1000	15
AAA/ PERRY WATER SYS	4150007	SALUDA	G41122	C	FIRST ROAD TO RIGHT,	0	52
AAA/ PERRY WATER SYS	4150007	SALUDA	G41121	C	IN CULDESAC LOOKOUT	0	52
SALUDA COUNTY WATER & SEWER AUTHORITY	4150010	SALUDA	G41150	C	550' EAST WELL ONE	40	84
SALUDA COUNTY WATER & SEWER AUTHORITY	4150010	SALUDA	G41149	C	200' SOUTHWEST WELL	150	84
SALUDA COUNTY WATER & SEWER AUTHORITY	4150010	SALUDA	G41148	C	WELL AT TANK	0	84
TANGLEWOOD S/D	4150011	SALUDA	G41187	S	ROCK-N-CREEK ROAD	0	20
CROMER'S MHP	4160004	SALUDA	G41179	S	RT OF PRK IN MET BOX	0	24
NAVARETTE MHP	4160005	SALUDA	G41180	S	LEFT OF DRIVEWAY	0	24
L&D APARTMENTS #2	4160006	SALUDA	G41181	S	FRONT LEFT OF MHP	13440	24
APARTMENT PROJECT S-4174	4160007	SALUDA	G41182	S	WELL #1	0	8
HEBEL'S RENTALS	4160008	SALUDA	G41184	S	65' FRM HWY 178	0	24
GRIFFIN MOBILE HOME PARK	4160009	SALUDA	G41190	S	BESIDE OWNER'S RESD	0	15
J S PROJECT #2	4160010	SALUDA	G41191	S	Northwest of drivewa	0	24
RICHARD DEASON MHP	4160011	SALUDA	G41192	C	Southside of propert	0	24
L&B CARE HOME	4170001	SALUDA	G41146	P	FIELD 100YD.S.OF BLD	800	28
LONG'S RESIDENTIAL CARE	4170002	SALUDA	G41151	P	RIGHT NEAR ENTRANCE	1200	37
CLARK HOUSE	4170003	SALUDA	G41188	S	RT OF BLDG,NXT TO HO	0	18
L&D APARTMENTS #2	4170300	SALUDA	G41193	S	Behind apartments	0	24
BARN CAMPGROUND	4170802	SALUDA	G41135	N	REAR OF STORE	0	120
PERSIMMON HILL CC	4170875	SALUDA	G41136	N	FRONT OF CLUBHOUSE.	0	15
J FORREST R SPRING CAMP	4171000	SALUDA	G41160	N	WELL #1	0	40
COTTON HOPE ORCHARDS INC	4171001	SALUDA	G41161	S	BEHIND CAMP	0	24
TITAN FARMS CAMP #6	4171004	SALUDA	G41164	N	CAMP #6 WELL	0	44
MPP FRICK CAMP #16	4171005	SALUDA	G41165	N	WELL #1	0	39
MPP HARE CAMP	4171007	SALUDA	G41167	N	WELL #1	0	39
MPP POSSUM HOLLOW CAMP	4171008	SALUDA	G41168	N	WELL #1	0	45
JIMMY FORREST LABOR CAMP	4171011	SALUDA	G41173	N	WELL #1	0	30

FACILITY	PWSID	SOURCEID	SAWI	CONTZ	YEAR	Total MGY	MGD
WAGNER TOWN OF	02WS001	02WS001G02	G02144	02	2002	7.307	0.0203
WAGNER TOWN OF	02WS001	02WS001G02	G02144	02	2003	8.007	0.0222
WAGNER TOWN OF	02WS001	02WS001G02	G02144	02	2004	7.515	0.0209
WAGNER TOWN OF	02WS001	02WS001G02	G02144	02	2005	8.05	0.0224
WAGNER TOWN OF	02WS001	02WS001G03	G02143	02	2002	11.821	0.0328
WAGNER TOWN OF	02WS001	02WS001G03	G02143	02	2003	12.725	0.0353
WAGNER TOWN OF	02WS001	02WS001G03	G02143	02	2004	11.097	0.0308
WAGNER TOWN OF	02WS001	02WS001G03	G02143	02	2005	8.079	0.0224
WAGNER TOWN OF	02WS001	02WS001G04	G02388	02	2002	17.004	0.0472
WAGNER TOWN OF	02WS001	02WS001G04	G02388	02	2003	18.195	0.0505
WAGNER TOWN OF	02WS001	02WS001G04	G02388	02	2004	16.799	0.0467
WAGNER TOWN OF	02WS001	02WS001G04	G02388	02	2005	18.747	0.0521
AIKEN CITY OF	02WS002	02WS002G01	G02309	02	2001	962.3	2.6731
AIKEN CITY OF	02WS002	02WS002G01	G02309	02	2002	262.75	0.7299
AIKEN CITY OF	02WS002	02WS002G01	G02309	02	2003	485.149	1.3476
AIKEN CITY OF	02WS002	02WS002G01	G02309	02	2004	437.86	1.2163
AIKEN CITY OF	02WS002	02WS002G01	G02309	02	2005	469.201	1.3033
AIKEN CITY OF	02WS002	02WS002G02	G02101	02	2001	1065.3	2.9592
AIKEN CITY OF	02WS002	02WS002G02	G02101	02	2002	326.3	0.9064
AIKEN CITY OF	02WS002	02WS002G02	G02101	02	2003	280.164	0.7782
AIKEN CITY OF	02WS002	02WS002G02	G02101	02	2004	327.89	0.9108
AIKEN CITY OF	02WS002	02WS002G02	G02101	02	2005	345.586	0.96
AIKEN CITY OF	02WS002	02WS002G03	G02126	02	2001	791.7	2.1992
AIKEN CITY OF	02WS002	02WS002G03	G02126	02	2002	468.3	1.3008
AIKEN CITY OF	02WS002	02WS002G03	G02126	02	2003	233.236	0.6479
AIKEN CITY OF	02WS002	02WS002G03	G02126	02	2004	245.81	0.6828
AIKEN CITY OF	02WS002	02WS002G03	G02126	02	2005	240.506	0.6681
AIKEN CITY OF	02WS002	02WS002G04	G02125	02	2002	326.3	0.9064
AIKEN CITY OF	02WS002	02WS002G04	G02125	02	2003	280.114	0.7781
AIKEN CITY OF	02WS002	02WS002G04	G02125	02	2004	331.32	0.9203
AIKEN CITY OF	02WS002	02WS002G04	G02125	02	2005	345.586	0.96
AIKEN CITY OF	02WS002	02WS002G05	G02127	02	2002	468.3	1.3008
AIKEN CITY OF	02WS002	02WS002G05	G02127	02	2003	233.236	0.6479
AIKEN CITY OF	02WS002	02WS002G05	G02127	02	2004	245.81	0.6828
AIKEN CITY OF	02WS002	02WS002G05	G02127	02	2005	242.012	0.6723
AIKEN CITY OF	02WS002	02WS002G06	G02386	02	2002	326.3	0.9064

AIKEN CITY OF	02WS002	02WS002G06	G02386	02	2003	280.108	0.7781
AIKEN CITY OF	02WS002	02WS002G06	G02386	02	2004	327.89	0.9108
AIKEN CITY OF	02WS002	02WS002G06	G02386	02	2005	345.586	0.96
AIKEN CITY OF	02WS002	02WS002G07	G02396	02	2002	262.75	0.7299
AIKEN CITY OF	02WS002	02WS002G07	G02396	02	2003	233.236	0.6479
AIKEN CITY OF	02WS002	02WS002G07	G02396	02	2004	245.84	0.6829
AIKEN CITY OF	02WS002	02WS002G07	G02396	02	2005	240.506	0.6681
AIKEN CITY OF	02WS002	02WS002G08	G02001	02	2003	233.236	0.6479
AIKEN CITY OF	02WS002	02WS002G08	G02001	02	2004	245.81	0.6828
AIKEN CITY OF	02WS002	02WS002G08	G02001	02	2005	240.506	0.6681
TALATHA W/D	02WS003	02WS003G02	G02153	02	2002	12.304	0.0342
TALATHA W/D	02WS003	02WS003G02	G02153	02	2003	8.564	0.0238
TALATHA W/D	02WS003	02WS003G02	G02153	02	2004	8.744	0.0243
TALATHA W/D	02WS003	02WS003G02	G02153	02	2005	8.042	0.0223
TALATHA W/D	02WS003	02WS003G03	G02154	02	2002	17.852	0.0496
TALATHA W/D	02WS003	02WS003G03	G02154	02	2003	16.066	0.0446
TALATHA W/D	02WS003	02WS003G03	G02154	02	2004	17.411	0.0484
TALATHA W/D	02WS003	02WS003G03	G02154	02	2005	16.824	0.0467
TALATHA W/D	02WS003	02WS003G04	G02155	02	2002	30.213	0.0839
TALATHA W/D	02WS003	02WS003G04	G02155	02	2003	27.236	0.0757
TALATHA W/D	02WS003	02WS003G04	G02155	02	2004	26.566	0.0738
TALATHA W/D	02WS003	02WS003G04	G02155	02	2005	25.067	0.0696
BATH W/D	02WS004	02WS004G01	G02151	02	2001	19	0.0528
BATH W/D	02WS004	02WS004G01	G02151	02	2002	23	0.0639
BATH W/D	02WS004	02WS004G01	G02151	02	2003	12	0.0333
BATH W/D	02WS004	02WS004G01	G02151	02	2004	15.637	0.0434
BATH W/D	02WS004	02WS004G01	G02151	02	2005	9.519	0.0264
BATH W/D	02WS004	02WS004G02	G02152	02	2001	22.8	0.0633
BATH W/D	02WS004	02WS004G02	G02152	02	2002	26	0.0722
BATH W/D	02WS004	02WS004G02	G02152	02	2003	18	0.05
BATH W/D	02WS004	02WS004G02	G02152	02	2004	12.249	0.034
BATH W/D	02WS004	02WS004G02	G02152	02	2005	14.659	0.0407
BREEZY HILL W/D	02WS005	02WS005G02	G02114	02	2002	47.946	0.1332
BREEZY HILL W/D	02WS005	02WS005G02	G02114	02	2003	39.775	0.1105
BREEZY HILL W/D	02WS005	02WS005G02	G02114	02	2004	38.885	0.108
BREEZY HILL W/D	02WS005	02WS005G02	G02114	02	2005	44.816	0.1245
BREEZY HILL W/D	02WS005	02WS005G04	G02115	02	2002	40.939	0.1137

BREEZY HILL W/D	02WS005	02WS005G04	G02115	02	2003	40.358	0.1121
BREEZY HILL W/D	02WS005	02WS005G04	G02115	02	2004	41.601	0.1156
BREEZY HILL W/D	02WS005	02WS005G04	G02115	02	2005	46.184	0.1283
BREEZY HILL W/D	02WS005	02WS005G05	G02116	02	2002	20.909	0.0581
BREEZY HILL W/D	02WS005	02WS005G05	G02116	02	2003	2.346	0.0065
BREEZY HILL W/D	02WS005	02WS005G05	G02116	02	2004	2.636	0.0073
BREEZY HILL W/D	02WS005	02WS005G05	G02116	02	2005	14.118	0.0392
BREEZY HILL W/D	02WS005	02WS005G06	G02117	02	2002	36.949	0.1026
BREEZY HILL W/D	02WS005	02WS005G06	G02117	02	2003	27.894	0.0775
BREEZY HILL W/D	02WS005	02WS005G06	G02117	02	2004	27.863	0.0774
BREEZY HILL W/D	02WS005	02WS005G06	G02117	02	2005	31.41	0.0873
BREEZY HILL W/D	02WS005	02WS005G07	G02118	02	2002	1.429	0.004
BREEZY HILL W/D	02WS005	02WS005G07	G02118	02	2003	1.745	0.0048
BREEZY HILL W/D	02WS005	02WS005G07	G02118	02	2004	2.323	0.0065
BREEZY HILL W/D	02WS005	02WS005G07	G02118	02	2005	25.4	0.0706
BREEZY HILL W/D	02WS005	02WS005G09	G02120	02	2002	41.131	0.1143
BREEZY HILL W/D	02WS005	02WS005G09	G02120	02	2003	33.98	0.0944
BREEZY HILL W/D	02WS005	02WS005G09	G02120	02	2004	34.062	0.0946
BREEZY HILL W/D	02WS005	02WS005G09	G02120	02	2005	36.237	0.1007
BREEZY HILL W/D	02WS005	02WS005G10	G02275	02	2002	32.143	0.0893
BREEZY HILL W/D	02WS005	02WS005G10	G02275	02	2003	28.132	0.0781
BREEZY HILL W/D	02WS005	02WS005G10	G02275	02	2004	31.804	0.0883
BREEZY HILL W/D	02WS005	02WS005G10	G02275	02	2005	37.896	0.1053
BREEZY HILL W/D	02WS005	02WS005G11	G02276	02	2002	26.188	0.0727
BREEZY HILL W/D	02WS005	02WS005G11	G02276	02	2003	28.107	0.0781
BREEZY HILL W/D	02WS005	02WS005G11	G02276	02	2004	26.165	0.0727
BREEZY HILL W/D	02WS005	02WS005G11	G02276	02	2005	23.481	0.0652
BREEZY HILL W/D	02WS005	02WS005G12	G02315	02	2002	41.312	0.1148
BREEZY HILL W/D	02WS005	02WS005G12	G02315	02	2003	39.199	0.1089
BREEZY HILL W/D	02WS005	02WS005G12	G02315	02	2004	37.533	0.1043
BREEZY HILL W/D	02WS005	02WS005G12	G02315	02	2005	32.181	0.0894
BREEZY HILL W/D	02WS005	02WS005G13	G02316	02	2002	47.076	0.1308
BREEZY HILL W/D	02WS005	02WS005G13	G02316	02	2003	33.568	0.0932
BREEZY HILL W/D	02WS005	02WS005G13	G02316	02	2004	43.176	0.1199
BREEZY HILL W/D	02WS005	02WS005G13	G02316	02	2005	38.339	0.1065
BREEZY HILL W/D	02WS005	02WS005G14	G02317	02	2002	41.624	0.1156
BREEZY HILL W/D	02WS005	02WS005G14	G02317	02	2003	33.102	0.092

BREEZY HILL W/D	02WS005	02WS005G14	G02317	02	2004	50.333	0.1398
BREEZY HILL W/D	02WS005	02WS005G14	G02317	02	2005	16.196	0.045
BREEZY HILL W/D	02WS005	02WS005G15	G02371	02	2002	27.595	0.0767
BREEZY HILL W/D	02WS005	02WS005G15	G02371	02	2003	31.565	0.0877
BREEZY HILL W/D	02WS005	02WS005G15	G02371	02	2004	38.436	0.1068
BREEZY HILL W/D	02WS005	02WS005G15	G02371	02	2005	32.362	0.0899
BREEZY HILL W/D	02WS005	02WS005G16	G02372	02	2002	24.716	0.0687
BREEZY HILL W/D	02WS005	02WS005G16	G02372	02	2003	29.333	0.0815
BREEZY HILL W/D	02WS005	02WS005G16	G02372	02	2004	34.885	0.0969
BREEZY HILL W/D	02WS005	02WS005G16	G02372	02	2005	27.571	0.0766
VALLEY PSA	02WS006	02WS006G01	G02122	02	2001	48.7	0.1353
VALLEY PSA	02WS006	02WS006G01	G02122	02	2002	43.8	0.1217
VALLEY PSA	02WS006	02WS006G01	G02122	02	2003	30.53	0.0848
VALLEY PSA	02WS006	02WS006G01	G02122	02	2004	32.633	0.0906
VALLEY PSA	02WS006	02WS006G01	G02122	02	2005	26.976	0.0749
VALLEY PSA	02WS006	02WS006G02	G02121	02	2001	48.7	0.1353
VALLEY PSA	02WS006	02WS006G02	G02121	02	2002	47.6	0.1322
VALLEY PSA	02WS006	02WS006G02	G02121	02	2003	40.23	0.1118
VALLEY PSA	02WS006	02WS006G02	G02121	02	2004	42.927	0.1192
VALLEY PSA	02WS006	02WS006G02	G02121	02	2005	52.205	0.145
VALLEY PSA	02WS006	02WS006G03	G02123	02	2001	54.9	0.1525
VALLEY PSA	02WS006	02WS006G03	G02123	02	2002	66.1	0.1836
VALLEY PSA	02WS006	02WS006G03	G02123	02	2003	66.22	0.1839
VALLEY PSA	02WS006	02WS006G03	G02123	02	2004	63.791	0.1772
VALLEY PSA	02WS006	02WS006G03	G02123	02	2005	60.808	0.1689
VALLEY PSA	02WS006	02WS006G04	G02331	02	2001	40.8	0.1133
VALLEY PSA	02WS006	02WS006G04	G02331	02	2002	24.4	0.0678
VALLEY PSA	02WS006	02WS006G04	G02331	02	2003	29.76	0.0827
VALLEY PSA	02WS006	02WS006G04	G02331	02	2004	23.939	0.0665
VALLEY PSA	02WS006	02WS006G04	G02331	02	2005	28.249	0.0785
VALLEY PSA	02WS006	02WS006G05	G02286	02	2001	149	0.4139
VALLEY PSA	02WS006	02WS006G05	G02286	02	2002	136.8	0.38
VALLEY PSA	02WS006	02WS006G05	G02286	02	2003	125.009	0.3472
VALLEY PSA	02WS006	02WS006G05	G02286	02	2004	75.078	0.2086
VALLEY PSA	02WS006	02WS006G05	G02286	02	2005	92.415	0.2567
BEECH ISLAND W/D	02WS008	02WS008G01	G02113	02	2001	47	0.1306
BEECH ISLAND W/D	02WS008	02WS008G01	G02113	02	2002	26	0.0722

BEECH ISLAND W/D	02WS008	02WS008G01	G02113	02	2003	12	0.0333
BEECH ISLAND W/D	02WS008	02WS008G01	G02113	02	2004	21	0.0583
BEECH ISLAND W/D	02WS008	02WS008G01	G02113	02	2005	15.582	0.0433
BEECH ISLAND W/D	02WS008	02WS008G02	G02111	02	2001	139	0.3861
BEECH ISLAND W/D	02WS008	02WS008G02	G02111	02	2002	131	0.3639
BEECH ISLAND W/D	02WS008	02WS008G02	G02111	02	2003	78	0.2167
BEECH ISLAND W/D	02WS008	02WS008G02	G02111	02	2004	104	0.2889
BEECH ISLAND W/D	02WS008	02WS008G02	G02111	02	2005	69.47	0.193
BEECH ISLAND W/D	02WS008	02WS008G03	G02109	02	2001	146	0.4056
BEECH ISLAND W/D	02WS008	02WS008G03	G02109	02	2002	149	0.4139
BEECH ISLAND W/D	02WS008	02WS008G03	G02109	02	2003	146	0.4056
BEECH ISLAND W/D	02WS008	02WS008G03	G02109	02	2004	106	0.2944
BEECH ISLAND W/D	02WS008	02WS008G03	G02109	02	2005	107.79	0.2994
BEECH ISLAND W/D	02WS008	02WS008G04	G02112	02	2001	87	0.2417
BEECH ISLAND W/D	02WS008	02WS008G04	G02112	02	2002	82	0.2278
BEECH ISLAND W/D	02WS008	02WS008G04	G02112	02	2003	75	0.2083
BEECH ISLAND W/D	02WS008	02WS008G04	G02112	02	2004	108	0.3
BEECH ISLAND W/D	02WS008	02WS008G04	G02112	02	2005	142.467	0.3957
BEECH ISLAND W/D	02WS008	02WS008G05	G02308	02	2001	114	0.3167
BEECH ISLAND W/D	02WS008	02WS008G05	G02308	02	2002	97	0.2694
BEECH ISLAND W/D	02WS008	02WS008G05	G02308	02	2003	146	0.4056
BEECH ISLAND W/D	02WS008	02WS008G05	G02308	02	2004	161	0.4472
BEECH ISLAND W/D	02WS008	02WS008G05	G02308	02	2005	167.579	0.4655
LANGLEY W/D	02WS009	02WS009G01	G02175	02	2002	30.429	0.0845
LANGLEY W/D	02WS009	02WS009G01	G02175	02	2003	18.999	0.0528
LANGLEY W/D	02WS009	02WS009G01	G02175	02	2004	15.57	0.0433
LANGLEY W/D	02WS009	02WS009G01	G02175	02	2005	22.638	0.0629
LANGLEY W/D	02WS009	02WS009G02	G02176	02	2002	26.595	0.0739
LANGLEY W/D	02WS009	02WS009G02	G02176	02	2003	18.573	0.0516
LANGLEY W/D	02WS009	02WS009G02	G02176	02	2004	14.058	0.0391
LANGLEY W/D	02WS009	02WS009G02	G02176	02	2005	22.922	0.0637
MONTMORENCI W/D	02WS011	02WS011G01	G02277	02	2001	80.2	0.2228
MONTMORENCI W/D	02WS011	02WS011G01	G02277	02	2002	76.1	0.2114
MONTMORENCI W/D	02WS011	02WS011G01	G02277	02	2003	59.1	0.1642
MONTMORENCI W/D	02WS011	02WS011G01	G02277	02	2004	80.6	0.2239
MONTMORENCI W/D	02WS011	02WS011G01	G02277	02	2005	79.649	0.2212
MONTMORENCI W/D	02WS011	02WS011G02	G02159	02	2001	31	0.0861

MONTMORENCI W/D	02WS011	02WS011G02	G02159	02	2002	30.2	0.0839
MONTMORENCI W/D	02WS011	02WS011G02	G02159	02	2003	25.5	0.0708
MONTMORENCI W/D	02WS011	02WS011G02	G02159	02	2004	22.9	0.0636
MONTMORENCI W/D	02WS011	02WS011G02	G02159	02	2005	2.7	0.0075
MONTMORENCI W/D	02WS011	02WS011G03	G02161	02	2001	2.2	0.0061
MONTMORENCI W/D	02WS011	02WS011G03	G02161	02	2002	17.7	0.0492
MONTMORENCI W/D	02WS011	02WS011G03	G02161	02	2003	23.4	0.065
MONTMORENCI W/D	02WS011	02WS011G03	G02161	02	2004	21.9	0.0608
MONTMORENCI W/D	02WS011	02WS011G03	G02161	02	2005	38.227	0.1062
JACKSON TOWN OF	02WS012	02WS012G01	G02142	02	2001	109.8	0.305
JACKSON TOWN OF	02WS012	02WS012G01	G02142	02	2002	100.7	0.2797
JACKSON TOWN OF	02WS012	02WS012G01	G02142	02	2003	72	0.2
JACKSON TOWN OF	02WS012	02WS012G01	G02142	02	2004	79.7	0.2214
JACKSON TOWN OF	02WS012	02WS012G01	G02142	02	2005	81.8	0.2272
JACKSON TOWN OF	02WS012	02WS012G02	G02141	02	2001	33	0.0917
JACKSON TOWN OF	02WS012	02WS012G02	G02141	02	2002	30.5	0.0847
JACKSON TOWN OF	02WS012	02WS012G02	G02141	02	2003	23.5	0.0653
JACKSON TOWN OF	02WS012	02WS012G02	G02141	02	2004	24	0.0667
JACKSON TOWN OF	02WS012	02WS012G02	G02141	02	2005	22.1	0.0614
JACKSON TOWN OF	02WS012	02WS012G03	G02399	02	2002	8.2	0.0228
JACKSON TOWN OF	02WS012	02WS012G03	G02399	02	2003	25.8	0.0717
JACKSON TOWN OF	02WS012	02WS012G03	G02399	02	2004	28.7	0.0797
JACKSON TOWN OF	02WS012	02WS012G03	G02399	02	2005	36.5	0.1014
BURNETTOWN TOWN OF	02WS013	02WS013G01	G02156	02	2001	15.1	0.0419
BURNETTOWN TOWN OF	02WS013	02WS013G01	G02156	02	2002	17	0.0472
BURNETTOWN TOWN OF	02WS013	02WS013G01	G02156	02	2003	18.5	0.0514
BURNETTOWN TOWN OF	02WS013	02WS013G01	G02156	02	2004	21.653	0.0601
BURNETTOWN TOWN OF	02WS013	02WS013G01	G02156	02	2005	20.5	0.0569
BURNETTOWN TOWN OF	02WS013	02WS013G02	G02157	02	2001	10.6	0.0294
BURNETTOWN TOWN OF	02WS013	02WS013G02	G02157	02	2002	10	0.0278
BURNETTOWN TOWN OF	02WS013	02WS013G02	G02157	02	2003	12.5	0.0347
BURNETTOWN TOWN OF	02WS013	02WS013G02	G02157	02	2004	37.611	0.1045
BURNETTOWN TOWN OF	02WS013	02WS013G02	G02157	02	2005	6.5	0.0181
BURNETTOWN TOWN OF	02WS013	02WS013G03	G02158	02	2001	14.5	0.0403
BURNETTOWN TOWN OF	02WS013	02WS013G03	G02158	02	2002	14	0.0389
BURNETTOWN TOWN OF	02WS013	02WS013G03	G02158	02	2003	15	0.0417
BURNETTOWN TOWN OF	02WS013	02WS013G03	G02158	02	2004	32.85	0.0913

BURNETTOWN TOWN OF	02WS013	02WS013G03	G02158	02	2005	10.2	0.0283
NEW ELLENTON CPW	02WS014	02WS014G01	G02108	02	2001	36.119	0.1003
NEW ELLENTON CPW	02WS014	02WS014G01	G02108	02	2002	40.383	0.1122
NEW ELLENTON CPW	02WS014	02WS014G01	G02108	02	2003	113.207	0.3145
NEW ELLENTON CPW	02WS014	02WS014G01	G02108	02	2004	89.364	0.2482
NEW ELLENTON CPW	02WS014	02WS014G01	G02108	02	2005	80.149	0.2226
NEW ELLENTON CPW	02WS014	02WS014G02	G02107	02	2001	48.779	0.1355
NEW ELLENTON CPW	02WS014	02WS014G02	G02107	02	2002	45.234	0.1257
NEW ELLENTON CPW	02WS014	02WS014G02	G02107	02	2003	11.157	0.031
NEW ELLENTON CPW	02WS014	02WS014G02	G02107	02	2004	39.543	0.1098
NEW ELLENTON CPW	02WS014	02WS014G02	G02107	02	2005	39.172	0.1088
NEW ELLENTON CPW	02WS014	02WS014G03	G02172	02	2001	71.449	0.1985
NEW ELLENTON CPW	02WS014	02WS014G03	G02172	02	2002	74.101	0.2058
NEW ELLENTON CPW	02WS014	02WS014G03	G02172	02	2003	74.211	0.2061
NEW ELLENTON CPW	02WS014	02WS014G03	G02172	02	2004	56.846	0.1579
NEW ELLENTON CPW	02WS014	02WS014G03	G02172	02	2005	69.297	0.1925
SALLEY TOWN OF	02WS015	02WS015G01	G02179	02	2002	8.522	0.0237
SALLEY TOWN OF	02WS015	02WS015G01	G02179	02	2003	7.648	0.0212
SALLEY TOWN OF	02WS015	02WS015G01	G02179	02	2004	5.542	0.0154
SALLEY TOWN OF	02WS015	02WS015G01	G02179	02	2005	5.889	0.0164
SALLEY TOWN OF	02WS015	02WS015G02	G02180	02	2002	10.16	0.0282
SALLEY TOWN OF	02WS015	02WS015G02	G02180	02	2003	10.168	0.0282
SALLEY TOWN OF	02WS015	02WS015G02	G02180	02	2004	6.246	0.0174
SALLEY TOWN OF	02WS015	02WS015G02	G02180	02	2005	6.99	0.0194
PERRY TOWN OF	02WS016	02WS016G03	G02324	02	2002	23.06	0.0641
PERRY TOWN OF	02WS016	02WS016G03	G02324	02	2003	20.607	0.0572
PERRY TOWN OF	02WS016	02WS016G03	G02324	02	2004	25.47	0.0708
PERRY TOWN OF	02WS016	02WS016G03	G02324	02	2005	22.998	0.0639
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G01	G02147	02	2002	0.179	0.0005
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G01	G02147	02	2003	0.074	0.0002
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G01	G02147	02	2004	0	0
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G01	G02147	02	2005	0	0
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G02	G02148	02	2002	0.821	0.0023
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G02	G02148	02	2003	0.061	0.0002
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G02	G02148	02	2004	0	0
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G02	G02148	02	2005	0	0
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G03	G02149	02	2002	7.571	0.021

COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G03	G02149	02	2003	2.224	0.0062
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G03	G02149	02	2004	2.608	0.0072
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G03	G02149	02	2005	7.207	0.02
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G04	G02150	02	2002	52.19	0.145
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G04	G02150	02	2003	1.208	0.0034
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G04	G02150	02	2004	34.422	0.0956
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G04	G02150	02	2005	35.529	0.0987
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G05	G02397	02	2003	45.632	0.1268
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G05	G02397	02	2004	24.023	0.0667
COLLEGE ACRES PUBLIC W/D	02WS018	02WS018G05	G02397	02	2005	9.148	0.0254
NEW HOLLAND W/D	02WS019	02WS019G01	G02181	02	2002	18	0.05
NEW HOLLAND W/D	02WS019	02WS019G01	G02181	02	2003	14.3	0.0397
NEW HOLLAND W/D	02WS019	02WS019G01	G02181	02	2004	20.801	0.0578
NEW HOLLAND W/D	02WS019	02WS019G01	G02181	02	2005	15.856	0.044
NEW HOLLAND W/D	02WS019	02WS019G02	G02348	02	2002	0	0
NEW HOLLAND W/D	02WS019	02WS019G02	G02348	02	2003	1.8	0.005
NEW HOLLAND W/D	02WS019	02WS019G02	G02348	02	2004	0	0
NEW HOLLAND W/D	02WS019	02WS019G02	G02348	02	2005	0	0
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G01	G02131	02	2002	187	0.5194
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G01	G02131	02	2003	53	0.1472
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G01	G02131	02	2004	57.3	0.1592
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G01	G02131	02	2005	192.4	0.5344
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G02	G02132	02	2002	187	0.5194
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G02	G02132	02	2003	351.7	0.9769
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G02	G02132	02	2004	351	0.975
WESTINGHOUSE SRS A AREA WS	02WS020	02WS020G02	G02132	02	2005	146.3	0.4064
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G01	G02188	02	2002	15.48	0.043
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G01	G02188	02	2003	20.9	0.0581
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G01	G02188	02	2004	20.1	0.0558
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G01	G02188	02	2005	16.32	0.0453
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G02	G02328	02	2002	9.49	0.0264
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G02	G02328	02	2003	12.6	0.035
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G02	G02328	02	2004	13.3	0.0369
WESTINGHOUSE SRS B AREA WS	02WS021	02WS021G02	G02328	02	2005	10.8	0.03
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G01	G02322	02	2002	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G01	G02322	02	2003	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G01	G02322	02	2004	0	0

WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G01	G02322	02	2005	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G02	G02323	02	2002	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G02	G02323	02	2003	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G02	G02323	02	2004	0	0
WESTINGHOUSE SRS D AREA WS	02WS022	02WS022G02	G02323	02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G01	G02191	02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G01	G02191	02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G01	G02191	02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G01	G02191	02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G02	G02192	02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G02	G02192	02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G02	G02192	02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G02	G02192	02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G03		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G03		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G03		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G03		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G04		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G04		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G04		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G04		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G05		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G05		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G05		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G05		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G06		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G06		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G06		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G06		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G07		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G07		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G07		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G07		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G09		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G09		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G09		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G09		02	2005	0	0

WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G10		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G10		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G10		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G10		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G11		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G11		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G11		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G11		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G12		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G12		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G12		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G12		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G13		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G13		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G13		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G13		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G14		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G14		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G14		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G14		02	2005	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G15		02	2002	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G15		02	2003	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G15		02	2004	0	0
WESTINGHOUSE SRS G AREA MISC WS	02WS023	02WS023G15		02	2005	0	0
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G01	G02198	02	2002	44.82	0.1245
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G01	G02198	02	2003	40	0.1111
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G01	G02198	02	2004	39	0.1083
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G01	G02198	02	2005	12.2	0.0339
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G02	G02306	02	2002	33.83	0.094
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G02	G02306	02	2003	38.9	0.1081
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G02	G02306	02	2004	40.2	0.1117
WESTINGHOUSE SRS K AREA WS	02WS024	02WS024G02	G02306	02	2005	66.7	0.1853
WEYERHAEUSER CO QUAIL RIDGE NURSERY	02WS025	02WS025G01	G02281	02	2002	1.35	0.0038
WEYERHAEUSER CO QUAIL RIDGE NURSERY	02WS025	02WS025G01	G02281	02	2003	0.29	0.0008
WEYERHAEUSER CO QUAIL RIDGE NURSERY	02WS025	02WS025G01	G02281	02	2004	0.97	0.0027
WEYERHAEUSER CO QUAIL RIDGE NURSERY	02WS025	02WS025G01	G02281	02	2005	3.2	0.0089
WILLISTON TOWN OF	06WS001	06WS001G02	G06115	06	2001	2.76	0.0077

WILLISTON TOWN OF	06WS001	06WS001G02	G06115	06	2002	16.84	0.0468
WILLISTON TOWN OF	06WS001	06WS001G02	G06115	06	2003	3.912	0.0109
WILLISTON TOWN OF	06WS001	06WS001G02	G06115	06	2004	279.797	0.7772
WILLISTON TOWN OF	06WS001	06WS001G02	G06115	06	2005	40.327	0.112
WILLISTON TOWN OF	06WS001	06WS001G05	G06147	06	2001	207.974	0.5777
WILLISTON TOWN OF	06WS001	06WS001G05	G06147	06	2002	184.7	0.5131
WILLISTON TOWN OF	06WS001	06WS001G05	G06147	06	2003	202.385	0.5622
WILLISTON TOWN OF	06WS001	06WS001G05	G06147	06	2004	191.501	0.5319
WILLISTON TOWN OF	06WS001	06WS001G05	G06147	06	2005	142.454	0.3957
WILLISTON TOWN OF	06WS001	06WS001G06	G06186	06	2001	10.407	0.0289
WILLISTON TOWN OF	06WS001	06WS001G06	G06186	06	2002	33.66	0.0935
WILLISTON TOWN OF	06WS001	06WS001G06	G06186	06	2003	39.924	0.1109
WILLISTON TOWN OF	06WS001	06WS001G06	G06186	06	2004	64.269	0.1785
WILLISTON TOWN OF	06WS001	06WS001G06	G06186	06	2005	52.109	0.1447
BLACKVILLE TOWN OF	06WS002	06WS002G02	G06116	06	2002	41.838	0.1162
BLACKVILLE TOWN OF	06WS002	06WS002G02	G06116	06	2003	7.749	0.0215
BLACKVILLE TOWN OF	06WS002	06WS002G02	G06116	06	2004	11.5	0.0319
BLACKVILLE TOWN OF	06WS002	06WS002G02	G06116	06	2005	0.155	0.0004
BLACKVILLE TOWN OF	06WS002	06WS002G03	G06117	06	2002	44.274	0.123
BLACKVILLE TOWN OF	06WS002	06WS002G03	G06117	06	2003	16.948	0.0471
BLACKVILLE TOWN OF	06WS002	06WS002G03	G06117	06	2004	48.089	0.1336
BLACKVILLE TOWN OF	06WS002	06WS002G03	G06117	06	2005	43.663	0.1213
BLACKVILLE TOWN OF	06WS002	06WS002G04	G06118	06	2002	60.2	0.1672
BLACKVILLE TOWN OF	06WS002	06WS002G04	G06118	06	2003	107.12	0.2976
BLACKVILLE TOWN OF	06WS002	06WS002G04	G06118	06	2004	69.055	0.1918
BLACKVILLE TOWN OF	06WS002	06WS002G04	G06118	06	2005	94.19	0.2616
BARNWELL CITY OF	06WS003	06WS003G06	G06106	06	2002	0	0
BARNWELL CITY OF	06WS003	06WS003G06	G06106	06	2003	0	0
BARNWELL CITY OF	06WS003	06WS003G06	G06106	06	2004	0	0
BARNWELL CITY OF	06WS003	06WS003G06	G06106	06	2005	0	0
BARNWELL CITY OF	06WS003	06WS003G07	G06107	06	2002	152.948	0.4249
BARNWELL CITY OF	06WS003	06WS003G07	G06107	06	2003	94.034	0.2612
BARNWELL CITY OF	06WS003	06WS003G07	G06107	06	2004	117.717	0.327
BARNWELL CITY OF	06WS003	06WS003G07	G06107	06	2005	163.676	0.4547
BARNWELL CITY OF	06WS003	06WS003G09	G06108	06	2002	0	0
BARNWELL CITY OF	06WS003	06WS003G09	G06108	06	2003	0	0
BARNWELL CITY OF	06WS003	06WS003G09	G06108	06	2004	0	0

BARNWELL CITY OF	06WS003	06WS003G09	G06108	06	2005	0	0
BARNWELL CITY OF	06WS003	06WS003G10	G06109	06	2002	154.575	0.4294
BARNWELL CITY OF	06WS003	06WS003G10	G06109	06	2003	60.169	0.1671
BARNWELL CITY OF	06WS003	06WS003G10	G06109	06	2004	134.517	0.3737
BARNWELL CITY OF	06WS003	06WS003G10	G06109	06	2005	176.589	0.4905
BARNWELL CITY OF	06WS003	06WS003G11	G06110	06	2002	54.618	0.1517
BARNWELL CITY OF	06WS003	06WS003G11	G06110	06	2003	78.769	0.2188
BARNWELL CITY OF	06WS003	06WS003G11	G06110	06	2004	47.279	0.1313
BARNWELL CITY OF	06WS003	06WS003G11	G06110	06	2005	41.138	0.1143
BARNWELL CITY OF	06WS003	06WS003G12	G06111	06	2002	56.984	0.1583
BARNWELL CITY OF	06WS003	06WS003G12	G06111	06	2003	55.946	0.1554
BARNWELL CITY OF	06WS003	06WS003G12	G06111	06	2004	65.135	0.1809
BARNWELL CITY OF	06WS003	06WS003G12	G06111	06	2005	53.848	0.1496
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G01		06	2002	0	0
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G01		06	2003	0	0
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G01		06	2004	11.011	0.0306
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G01		06	2005	3.979	0.0111
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G02		06	2002	0	0
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G02		06	2003	10.912	0.0303
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G02		06	2004	45.154	0.1254
SC ADVANCED TECHNOLOGY PARK	06WS004	06WS004G02		06	2005	18.183	0.0505
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G04	G20104	20	2002	3.2	0.0089
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G04	G20104	20	2003	1.097	0.003
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G04	G20104	20	2004	5.519	0.0153
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G04	G20104	20	2005	4.848	0.0135
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G05	G20105	20	2002	2.53	0.007
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G05	G20105	20	2003	1.768	0.0049
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G05	G20105	20	2004	3.035	0.0084
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G05	G20105	20	2005	3.001	0.0083
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G07	G20107	20	2002	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G07	G20107	20	2003	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G07	G20107	20	2004	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G07	G20107	20	2005	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G09	G20109	20	2002	4.08	0.0113
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G09	G20109	20	2003	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G09	G20109	20	2004	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G09	G20109	20	2005	1.775	0.0049

JENKINSVILLE WATER DISTRICT	20WS002	20WS002G10	G20110	20	2002	7.02	0.0195
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G10	G20110	20	2003	7.01	0.0195
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G10	G20110	20	2004	6.954	0.0193
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G10	G20110	20	2005	6.806	0.0189
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G11	G20129	20	2002	6.57	0.0183
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G11	G20129	20	2003	3.993	0.0111
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G11	G20129	20	2004	5.927	0.0165
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G11	G20129	20	2005	4.481	0.0124
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G12	G20133	20	2002	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G12	G20133	20	2003	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G12	G20133	20	2004	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G12	G20133	20	2005	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G13	G20160	20	2002	17.72	0.0492
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G13	G20160	20	2003	13.857	0.0385
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G13	G20160	20	2004	21.899	0.0608
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G13	G20160	20	2005	19.168	0.0532
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G14	G20128	20	2002	2	0.0056
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G14	G20128	20	2003	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G14	G20128	20	2004	0	0
JENKINSVILLE WATER DISTRICT	20WS002	20WS002G14	G20128	20	2005	0	0
MID COUNTY WATER DIST #1	20WS050	20WS050G01	G20130	20	2001	8.64	0.024
MID COUNTY WATER DIST #1	20WS050	20WS050G01	G20130	20	2002	9.128	0.0254
MID COUNTY WATER DIST #1	20WS050	20WS050G01	G20130	20	2003	7.868	0.0219
MID COUNTY WATER DIST #1	20WS050	20WS050G01	G20130	20	2004	6.3	0.0175
MID COUNTY WATER DIST #1	20WS050	20WS050G01	G20130	20	2005	7.266	0.0202
MID COUNTY WATER DIST #1	20WS050	20WS050G02	G20131	20	2001	8.424	0.0234
MID COUNTY WATER DIST #1	20WS050	20WS050G02	G20131	20	2002	9.654	0.0268
MID COUNTY WATER DIST #1	20WS050	20WS050G02	G20131	20	2003	7.596	0.0211
MID COUNTY WATER DIST #1	20WS050	20WS050G02	G20131	20	2004	6.2	0.0172
MID COUNTY WATER DIST #1	20WS050	20WS050G02	G20131	20	2005	7.091	0.0197
MID COUNTY WATER DIST #1	20WS050	20WS050G03	G20132	20	2001	4.524	0.0126
MID COUNTY WATER DIST #1	20WS050	20WS050G03	G20132	20	2002	4.62	0.0128
MID COUNTY WATER DIST #1	20WS050	20WS050G03	G20132	20	2003	3.863	0.0107
MID COUNTY WATER DIST #1	20WS050	20WS050G03	G20132	20	2004	3.8	0.0106
MID COUNTY WATER DIST #1	20WS050	20WS050G03	G20132	20	2005	3.965	0.011
MID COUNTY WATER DIST #1	20WS050	20WS050G04	G20134	20	2001	0.348	0.001
MID COUNTY WATER DIST #1	20WS050	20WS050G04	G20134	20	2002	0.098	0.0003

MID COUNTY WATER DIST #1	20WS050	20WS050G04	G20134	20	2003	0	0
MID COUNTY WATER DIST #1	20WS050	20WS050G04	G20134	20	2004	0	0
MID COUNTY WATER DIST #1	20WS050	20WS050G04	G20134	20	2005	1.617	0.0045
MID COUNTY WATER DIST #1	20WS050	20WS050G05	G20135	20	2001	7.152	0.0199
MID COUNTY WATER DIST #1	20WS050	20WS050G05	G20135	20	2002	14.496	0.0403
MID COUNTY WATER DIST #1	20WS050	20WS050G05	G20135	20	2003	11.05	0.0307
MID COUNTY WATER DIST #1	20WS050	20WS050G05	G20135	20	2004	4.7	0.0131
MID COUNTY WATER DIST #1	20WS050	20WS050G05	G20135	20	2005	7.805	0.0217
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G01	G32113	32	2001	52.1	0.1447
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G01	G32113	32	2002	49.1	0.1364
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G01	G32113	32	2003	50.3	0.1397
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G01	G32113	32	2004	66.9	0.1858
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G01	G32113	32	2005	64.7	0.1797
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G02	G32114	32	2001	16.1	0.0447
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G02	G32114	32	2002	14.9	0.0414
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G02	G32114	32	2003	14.5	0.0403
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G02	G32114	32	2004	24	0.0667
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G02	G32114	32	2005	19.9	0.0553
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G03	G32115	32	2001	19.6	0.0544
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G03	G32115	32	2002	19.8	0.055
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G03	G32115	32	2003	20	0.0556
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G03	G32115	32	2004	25.8	0.0717
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G03	G32115	32	2005	21.5	0.0597
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G04	G32116	32	2001	43.4	0.1206
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G04	G32116	32	2002	37.6	0.1044
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G04	G32116	32	2003	38.4	0.1067
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G04	G32116	32	2004	28.9	0.0803
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G04	G32116	32	2005	45	0.125
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G05	G32739	32	2001	48.9	0.1358
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G05	G32739	32	2002	40	0.1111
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G05	G32739	32	2003	38.3	0.1064
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G05	G32739	32	2004	44.2	0.1228
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G05	G32739	32	2005	37.9	0.1053
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G06	G32874	32	2001	48.5	0.1347
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G06	G32874	32	2002	73.1	0.2031
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G06	G32874	32	2003	59.6	0.1656
GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G06	G32874	32	2004	78.4	0.2178

GASTON RURAL COMMUNITY WATER DISTRICT	32WS006	32WS006G06	G32874	32	2005	73.9	0.2053
GILBERT-SUMMIT W/D	32WS012	32WS012G01	G32104	32	2002	7.43	0.0206
GILBERT-SUMMIT W/D	32WS012	32WS012G01	G32104	32	2003	4.932	0.0137
GILBERT-SUMMIT W/D	32WS012	32WS012G01	G32104	32	2004	5.158	0.0143
GILBERT-SUMMIT W/D	32WS012	32WS012G01	G32104	32	2005	0	0
GILBERT-SUMMIT W/D	32WS012	32WS012G02	G32105	32	2002	0	0
GILBERT-SUMMIT W/D	32WS012	32WS012G02	G32105	32	2003	5.81	0.0161
GILBERT-SUMMIT W/D	32WS012	32WS012G02	G32105	32	2004	8.071	0.0224
GILBERT-SUMMIT W/D	32WS012	32WS012G02	G32105	32	2005	6.603	0.0183
GILBERT-SUMMIT W/D	32WS012	32WS012G04	G32107	32	2002	0	0
GILBERT-SUMMIT W/D	32WS012	32WS012G04	G32107	32	2003	1.254	0.0035
GILBERT-SUMMIT W/D	32WS012	32WS012G04	G32107	32	2004	2.14	0.0059
GILBERT-SUMMIT W/D	32WS012	32WS012G04	G32107	32	2005	1.775	0.0049
GILBERT-SUMMIT W/D	32WS012	32WS012G06	G32109	32	2002	4.25	0.0118
GILBERT-SUMMIT W/D	32WS012	32WS012G06	G32109	32	2003	8.197	0.0228
GILBERT-SUMMIT W/D	32WS012	32WS012G06	G32109	32	2004	8.191	0.0228
GILBERT-SUMMIT W/D	32WS012	32WS012G06	G32109	32	2005	7.706	0.0214
GILBERT-SUMMIT W/D	32WS012	32WS012G07	G32110	32	2002	6.99	0.0194
GILBERT-SUMMIT W/D	32WS012	32WS012G07	G32110	32	2003	16.239	0.0451
GILBERT-SUMMIT W/D	32WS012	32WS012G07	G32110	32	2004	16.149	0.0449
GILBERT-SUMMIT W/D	32WS012	32WS012G07	G32110	32	2005	0	0
GILBERT-SUMMIT W/D	32WS012	32WS012G10	G32678	32	2002	34.63	0.0962
GILBERT-SUMMIT W/D	32WS012	32WS012G10	G32678	32	2003	30.47	0.0846
GILBERT-SUMMIT W/D	32WS012	32WS012G10	G32678	32	2004	33.577	0.0933
GILBERT-SUMMIT W/D	32WS012	32WS012G10	G32678	32	2005	45.789	0.1272
GILBERT-SUMMIT W/D	32WS012	32WS012G11	G32677	32	2002	64.58	0.1794
GILBERT-SUMMIT W/D	32WS012	32WS012G11	G32677	32	2003	28.569	0.0794
GILBERT-SUMMIT W/D	32WS012	32WS012G11	G32677	32	2004	32.623	0.0906
GILBERT-SUMMIT W/D	32WS012	32WS012G11	G32677	32	2005	33.553	0.0932
GILBERT-SUMMIT W/D	32WS012	32WS012G12	G32834	32	2003	56.598	0.1572
GILBERT-SUMMIT W/D	32WS012	32WS012G12	G32834	32	2004	67.173	0.1866
GILBERT-SUMMIT W/D	32WS012	32WS012G12	G32834	32	2005	75.927	0.2109
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G01	G36113	36	2001	5.117	0.0142
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G01	G36113	36	2002	4.9	0.0136
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G01	G36113	36	2003	12.133	0.0337
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G01	G36113	36	2004	5.263	0.0146
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G01	G36113	36	2005	0	0

NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G02	G36114	36	2001	1.555	0.0043
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G02	G36114	36	2002	0.86	0.0024
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G02	G36114	36	2003	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G02	G36114	36	2004	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G02	G36114	36	2005	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G09	G36110	36	2001	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G09	G36110	36	2002	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G09	G36110	36	2003	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G09	G36110	36	2004	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G09	G36110	36	2005	0	0
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G13	G36111	36	2002	9.81	0.0273
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G13	G36111	36	2003	10.885	0.0302
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G13	G36111	36	2004	5.17	0.0144
NEWBERRY COUNTY WATER & SEWER AUTHORITY	36WS002	36WS002G13	G36111	36	2005	0	0
PROSPERITY TOWN OF	36WS004	36WS004G01	G36103	36	2002	9.094	0.0253
PROSPERITY TOWN OF	36WS004	36WS004G01	G36103	36	2003	8.994	0.025
PROSPERITY TOWN OF	36WS004	36WS004G01	G36103	36	2004	7.82	0.0217
PROSPERITY TOWN OF	36WS004	36WS004G01	G36103	36	2005	7.645	0.0212
PROSPERITY TOWN OF	36WS004	36WS004G02	G36104	36	2002	0	0
PROSPERITY TOWN OF	36WS004	36WS004G02	G36104	36	2003	0	0
PROSPERITY TOWN OF	36WS004	36WS004G02	G36104	36	2004	0	0
PROSPERITY TOWN OF	36WS004	36WS004G02	G36104	36	2005	0	0
PROSPERITY TOWN OF	36WS004	36WS004G03	G36105	36	2002	9.188	0.0255
PROSPERITY TOWN OF	36WS004	36WS004G03	G36105	36	2003	7.297	0.0203
PROSPERITY TOWN OF	36WS004	36WS004G03	G36105	36	2004	6.136	0.017
PROSPERITY TOWN OF	36WS004	36WS004G03	G36105	36	2005	5.873	0.0163
PROSPERITY TOWN OF	36WS004	36WS004G04	G36107	36	2002	5.425	0.0151
PROSPERITY TOWN OF	36WS004	36WS004G04	G36107	36	2003	8.056	0.0224
PROSPERITY TOWN OF	36WS004	36WS004G04	G36107	36	2004	6.567	0.0182
PROSPERITY TOWN OF	36WS004	36WS004G04	G36107	36	2005	8.107	0.0225
RIDGE SPRING TOWN OF	41WS002	41WS002G03	G41103	41	2001	0	0
RIDGE SPRING TOWN OF	41WS002	41WS002G03	G41103	41	2002	102	0.2833
RIDGE SPRING TOWN OF	41WS002	41WS002G03	G41103	41	2003	105.535	0.2932
RIDGE SPRING TOWN OF	41WS002	41WS002G03	G41103	41	2004	2.397	0.0067
RIDGE SPRING TOWN OF	41WS002	41WS002G03	G41103	41	2005	79.02	0.2195

Fairfield 1997

Sec 2.3 Ref. 8

COMPREHENSIVE PLAN UPDATE, 1997

FAIRFIELD COUNTY

Prepared By: Vismor & Associates, Inc.

RESOLUTION
RECOMMENDING ADOPTION OF
A COMPREHENSIVE PLAN
FOR
FAIRFIELD COUNTY, SOUTH CAROLINA

WHEREAS, the General Assembly of South Carolina enacted in 1994 an amendment to the Code of Laws of South Carolina by adding Chapter 29 to Title 6, "South Carolina Local Government Comprehensive Planning Enabling Act of 1994", and repealing all previously enacted planning Acts and Codes; and

WHEREAS, the 1994 Enabling Act requires that the local planning commission develop and maintain a planning process which will result in the systematic preparation and continued reevaluation and updating of those elements considered critical, necessary, and desirable to guide the development and redevelopment of its area of jurisdiction; and

WHEREAS, the planning process shall include the development of a Comprehensive Plan which shall consist of a population element, an economic element, natural and cultural resources element, a community facilities element, a housing element, and a land use element; and

WHEREAS, the Fairfield County Planning Commission developed and adopted 11-19-92 such a Plan; and

WHEREAS, the 1994 Planning Enabling Act stipulates that the "Planning Commission shall review the Comprehensive Plan or elements of it as often as necessary, but not less than once every five years; and

WHEREAS, the Fairfield County Planning Commission on this five-year anniversary (1997) has reviewed the Plan to determine the need for change, and has recommended amending the Plan to incorporate such change(s) as included in such document and shown on the Plan Map:

NOW THEREFORE, THE FAIRFIELD COUNTY PLANNING COMMISSION, BY RESOLUTION, HEREBY RECOMMENDS FOR ADOPTION BY FAIRFIELD COUNTY COUNCIL A REVISED AND AMENDED "COMPREHENSIVE PLAN" FOR FAIRFIELD COUNTY, INCLUDING ALL REFERENCED PLAN MAPS, THIS 15 DAY OF APRIL, 1997.

Mike Mills

Mike Mills, Chairman
Fairfield County Planning Commission

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INTRODUCTION

Fairfield County was created in 1785, with the division of the Camden District into five counties. Prior to the establishment of the county, it was a hunting ground for the Catawba Indians, and was subsequently settled by the English and Scotch-Irish, beginning in 1740.

Early English settlements were made around rivers and creeks. Eventually these settlements led to a cotton plantation culture which gave way to "share cropping" following the War Between the States.

Share cropping, in turn, led to soil depletion and massive erosion of most of the county. And finally, the arrival of the boll weevil in about 1920 finished the cotton industry in Fairfield County. From this adversity, the county has rebounded with a more vigorous and diversified economic base, as discussed herein.

Fairfield County is organized under the Council-Administrator form of government, authorized by the Home Rule Act of 1974. The centerpiece of the governmental complex is the historical Fairfield County Courthouse, constructed in 1823.

For all the changes that have taken place over time, Fairfield, with an area of about 686 square miles and a population density of only 26.5 persons per square mile, remains a predominantly rural area. However, it is being impacted as never before by the expansion of the Greater Columbia Area, and improved accessibility via I-77 through the county.

These changes have and will continue to support the suburbanization of employment facilities in the county. They may also lead to the exurbanization of Winnsboro and Ridgeway, and the suburbanization of areas in closer proximity to Richland County.

These development scenarios surely will alter the landscape and the rural character of Fairfield County. And if left unplanned and uncontrolled, these changes could result in a patchwork of subdivisions, commercial strips, and incompatible industrial uses completely lacking in character or traditional values, compromising rather than enhancing "quality of life" in the county. In addition to creating negative fall-out sometimes associated with development, and lending order to the process,

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1 Central Midlands Regional Planning Council, Central Midlands Historic Preservation Survey, 1974.

SECTION I

DEMOGRAPHIC AND ECONOMIC OVERVIEW

This initial section of the Plan will dimension the influence of demographics and economics on development and land use in Fairfield County.

Characteristics of the population are studied over time to determine trends, composition, distribution and related information essential to the planning process. The economic base also is assessed in terms of its influence on existing and future development.

DEMOGRAPHIC TRENDS

An awareness of the population base and what it is doing is critical to the development of a Plan. How many people are we planning for? What is the trend? What are the characteristics of the population? Where is growth taking place?

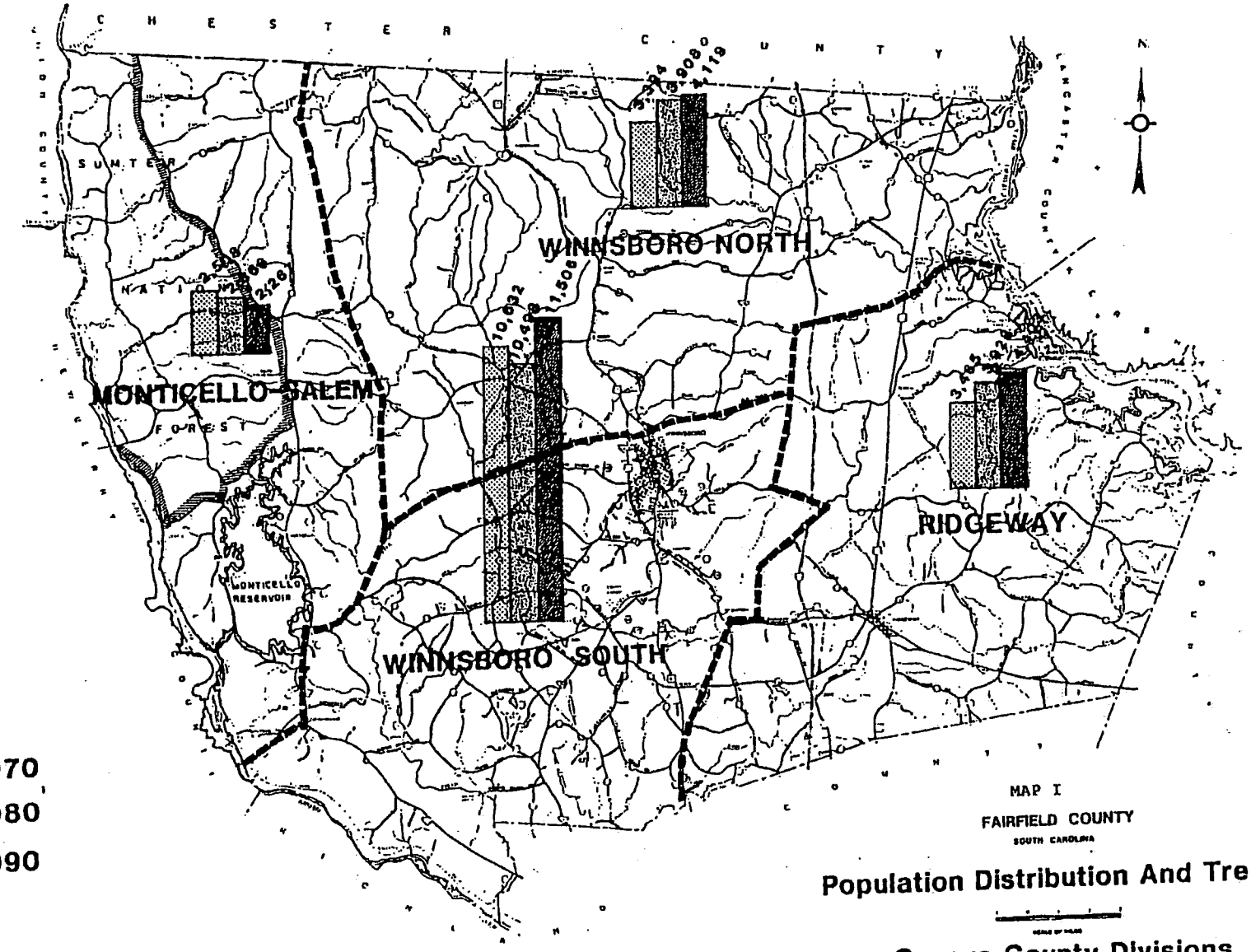
The answer to these questions will tell us much about what to expect in the way of future land use and intensity of development.

The official 1990 Census places the number of county residents at 22,295, up 7.7 percent over the 1980 population, which was up 3.5 percent over 1970. This 20-year growth record reverses an earlier out-migration trend recorded in the 1960s, when the county population declined by 3.4 percent.

Overall, growth of the county has not kept pace with that of the State, which recorded gains of 20 percent and 11.7 percent, respectively during the 70s and 80s. However, growth in two areas of the county, Ridgeway and Winnsboro south, closely mirrors the average rate of increase for the State.

The Ridgeway Census County Division (see Map I) increased by 13.4 percent between 1970 and 1980, and by 12.1 percent between 1980 and 1990, above the state average of 11.1 percent. Increased growth in Winnsboro south was even stronger during the 80s, although the rate was slightly less at 9.6 percent.

The growth of these areas may be attributed to improved linkage by I-77 to the Columbia MSA (Metropolitan Statistical Area), better accessibility to "outside" market areas, and to opening these areas and their inherent amenities to development.



MAP I

FAIRFIELD COUNTY

SOUTH CAROLINA

Population Distribution And Trends

Census County Divisions

TABLE II

GENDER COMPOSITION AND TRENDS
FAIRFIELD COUNTY, 1970-1990

	1970		1980		1990	
	No.	%	No.	%	No.	%
Males	9,756	48.8	9,993	48.3	10,689	47.9
Over 65	776	03.9	959	04.6	1,206	05.4
Females	10,243	51.2	10,707	51.7	11,606	52.1
Over 65	1,083	05.4	1,482	07.2	1,835	08.2

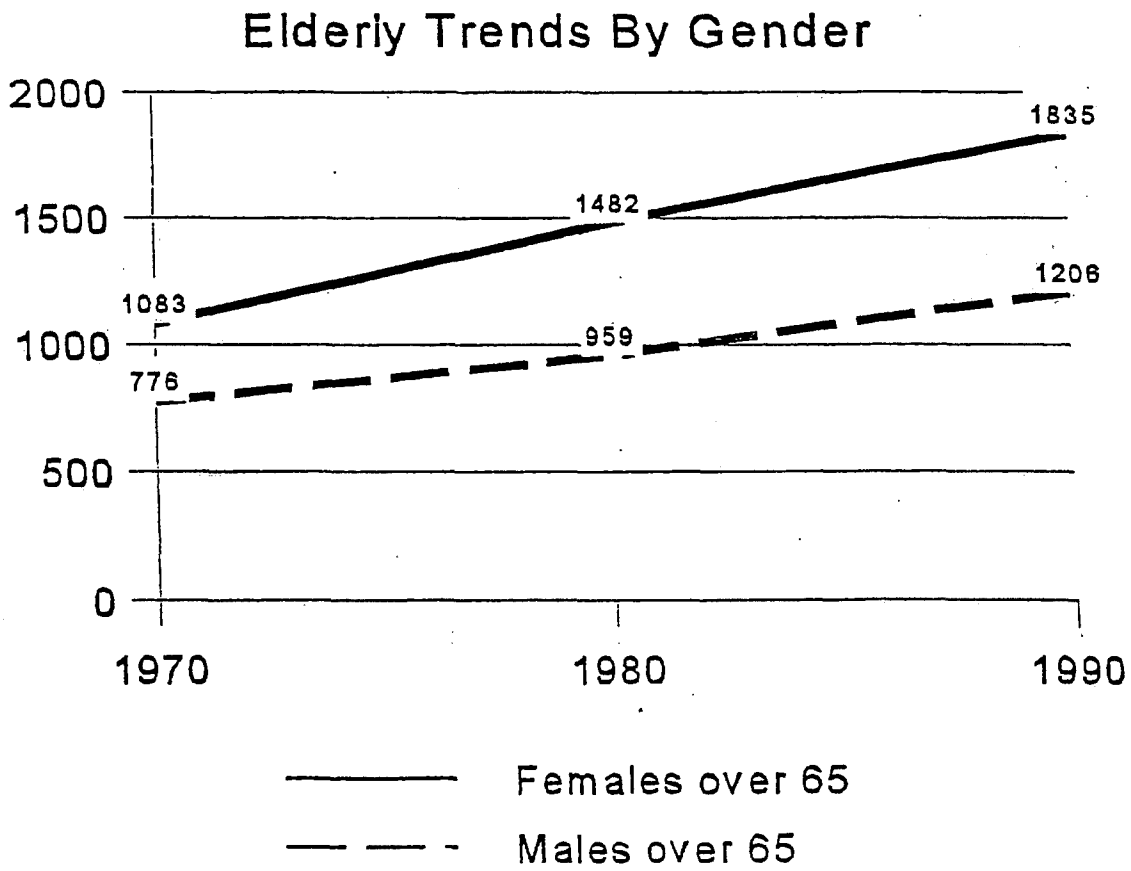


TABLE IV

AGE COMPOSITION AND TRENDS
FAIRFIELD COUNTY, 1970-1990

	1970		1980		1990	
	NO.	%	NO.	%	NO.	%
Under 18	8,172	.41	6,764	.33	6,343	.28
18 - 64	9,968	.50	11,495	.55	12,911	.58
65 and over	1,859	.09	2,441	.12	3,041	.14
TOTAL	19,999	100	20,700	100	22,295	100

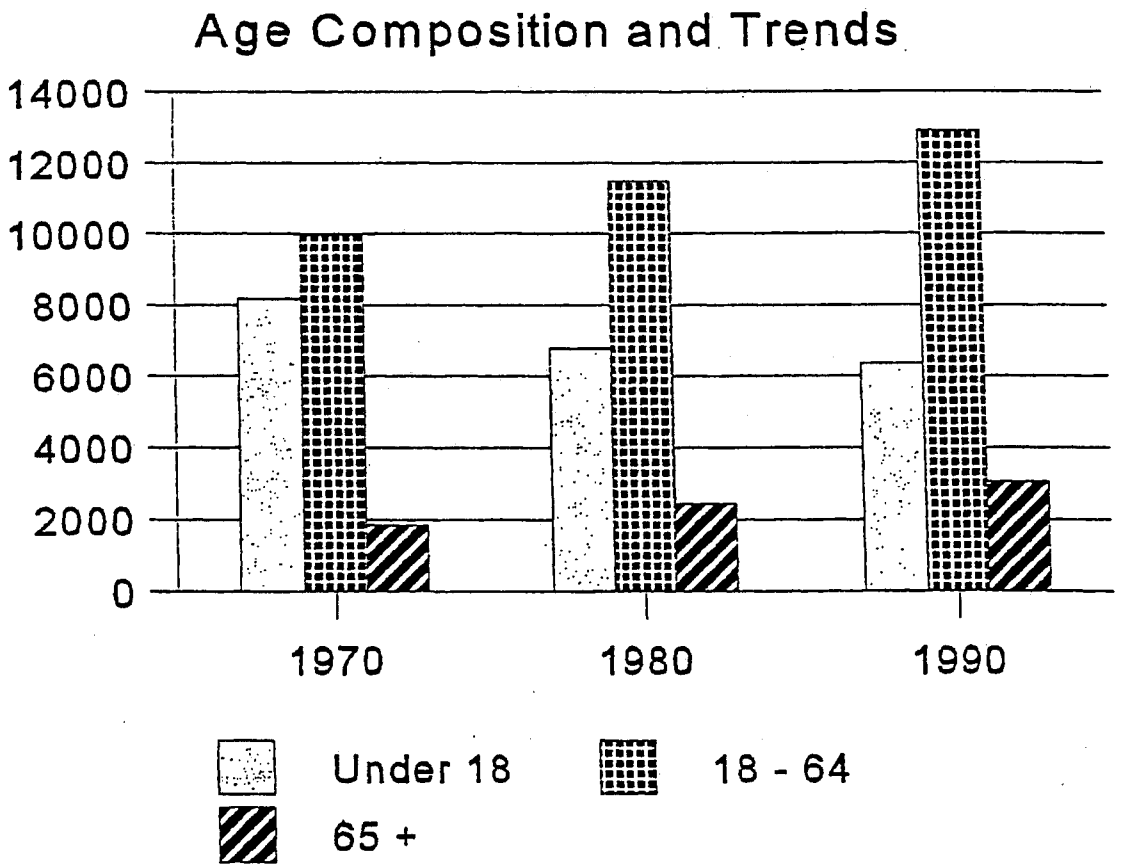
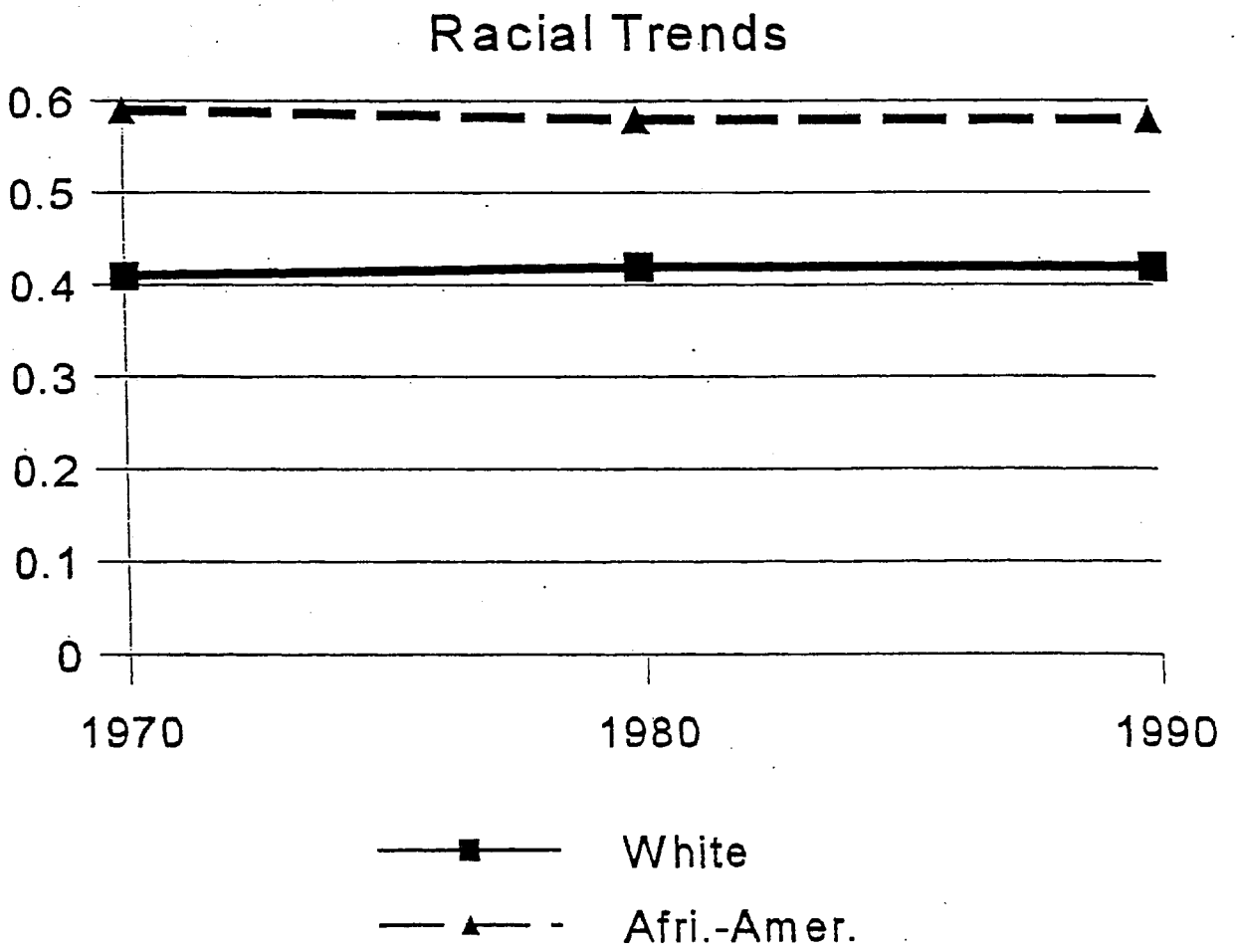


TABLE V

RACIAL COMPOSITION AND TRENDS
FAIRFIELD COUNTY, 1970-1990

				CHANGE			
				1970-1980		1980-1990	
NUMBER	1970	1980	1990	NO.	%	NO.	%
White	8,115	8,580	9,244	465	.06	664	.08
African-Amer.	11,882	12,083	12,994	201	.02	911	.08
Other	2	37	57	35	17.5	20	.54



Winnsboro North Census Divisions. Only the Monticello-Salem Division is projected to decline, but not significantly.

Projected increases in the three "growth" divisions are predicated in part on their proximity to I-77, improved accessibility and enhanced development potential.

Continued polarization of population in the Winnsboro area is projected, together with relatively strong growth in the Ridgeway and Lake Wateree Areas.

At this time, no major deviations from existing patterns of development are projected, only expansions.

HOUSING

Occupancy Characteristics

To be expected, the increase in housing units over the last 20 years (between 1970 and 1990) far exceeded the increase in population. The reason, of course, is that the number of persons per household declined during this period from 3.80 to 2.93. At the same time, the number of one-person households increased from 14 to 22 percent of all households.

Table VII

Household Characteristics
Fairfield County

	1970	1980	1990
Number of Households	5,284	6,355	7,467
Persons Per Household	3.80	3.21	2.93
Number of One-Person Households	741	1,231	1,634
Percent Total	.14	.19	.22

Source: U.S. Bureau of Census, Detailed Housing Characteristics, Selected Years.

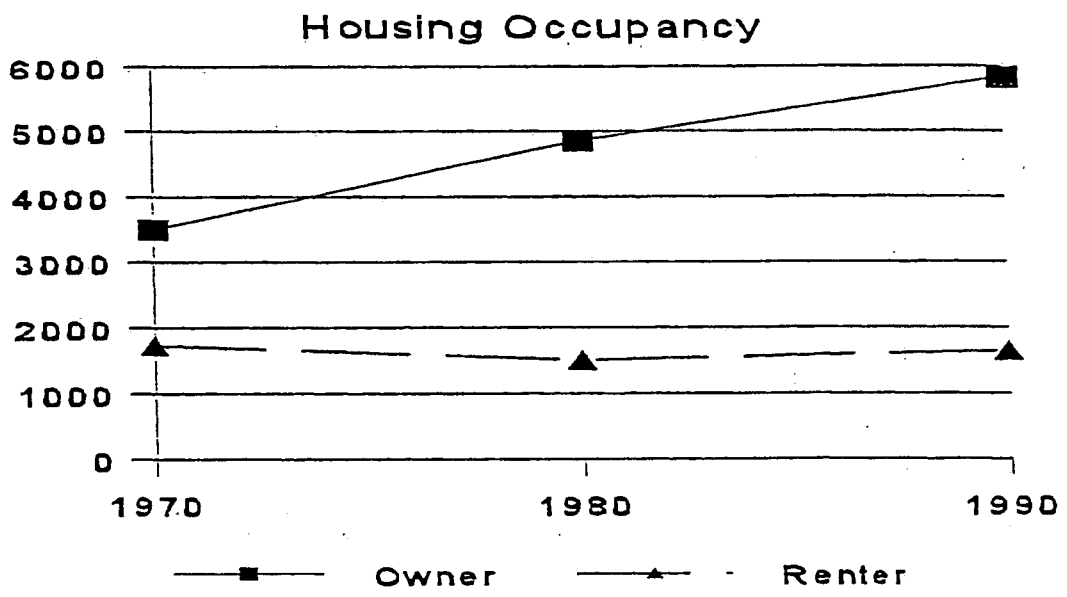
This trend toward smaller households bodes well for the housing industry, as smaller households translate into more housing just to accommodate the same number of people. And in a growth situation, the results are compounded as evidenced by a 1[illegible] percent increase in housing between 1970 and 1980, and an 18

TABLE VIII

HOUSING OCCUPANCY CHARACTERISTICS,
FAIRFIELD COUNTY, 1970-1990

	1970	1990	CHANGE 1970-1990 NO.	%
Year-Round Housing Units	5,887	8,115	2,228	38
Owner-occupied	3,497	5,831	2,334	67
Percent	.60	.72		
Renter-occupied	1,729	1,636	- 93	-05
Percent	.29	.20	- 13	-02
Vacant	661	648		
Percent	.11	.08		
Seasonal Recreational Housing Units	120	615	495	413

Source: U.S. Bureau of Census, Detailed Housing Characteristics, 1970, 1980, 1990.



Financial Characteristics

The financial characteristics of owner-occupied housing indicate that a majority of the homes in Fairfield County are relatively low value, and perhaps structurally deficient in some way. Over 53 percent of all owner-occupied housing is valued at less than $50,000, compared with only 37 percent statewide. Conversely, less than 10 percent of all housing is valued at or above $100,000. The median housing value in the county is only $47,500.

These characteristics tell us a lot about living conditions in the county, which appear to reflect a more basic existence for the majority of home owners, irrespective of relative housing and land costs.

Table X

Housing Costs and Values
Fairfield County, 1990

	Owner-Occupied Dwellings	
	No. Units	Ratio
Less than $50,000	1,919	.53
$50,000 - 99,999	1,380	.38
100,000 -149,999	232	.06
150,000 -199,999	60	.02
200,000 plus	26	.01

MEDIAN VALUE $47,500

Source: Ibid.

INCOME

Income is a definitive measure of life style. As such, it must be considered "below average" in Fairfield County, based on comparables to the State.

Fairfield County residents have per capita incomes approximately 24 percent below the state average. And over the last eight years, from 1981 to 1989, there has been relatively little change in relation to the state.

sector. Job development was not as significant in the other two major business categories (retail and wholesale trade), but increases were recorded in both.

Still the major business activity in Fairfield County is in retail trade, accounting in 1987 for 58 percent of the business establishments, 62 percent of the jobs in business, and 70 percent of sales. While the largest gains have been in the service sector, it is still relatively small compared with the retail sector.

On closer examination of the service sector, we see that health services lead the way in the number of establishments, in spite of a decline between 1982 and 1987. Following in order of numbers of establishments are automotive, business, amusement, legal, hotel, personal, engineering and research.

With respect to retail establishments, the leading business activity is in food stores, followed by eating and drinking establishments, gas stations, general merchandise, building materials and hardware, drug, auto dealers, apparel shops and furniture stores.

Most of these establishments are not in the unincorporated areas of the county however. They are located in the Towns of Winnsboro and Ridgeway, where the population is sufficiently concentrated to support business activities and enterprises. As a result, their impact on land use and development of the unincorporated areas is relatively limited at this time. That is not to say that suburbanization and movement of such activities will not impact the countryside in the future. Indeed, it is quite likely as the ties inevitably strengthen between Fairfield and the Columbia MSA (Metropolitan Statistical Area). And planning to accommodate these potential occurrences is part of what this Plan is all about.

EMPLOYMENT

Employment and job opportunities do more to influence growth and development than perhaps any other factor. In fact, studies show that the creation of 100 new industrial jobs will generate 68 new non-manufacturing jobs, one new retail establishment, and 67 additional families, among other things.

Thirty-one percent of all non-agricultural jobs in Fairfield County were in manufacturing in 1994, down five percent over the last eight years. The largest employer is in transportation equipment, resulting from the location of Mack Trucks in 1987, followed by apparel and other textiles.

In the area of non-manufacturing, which provides about 65

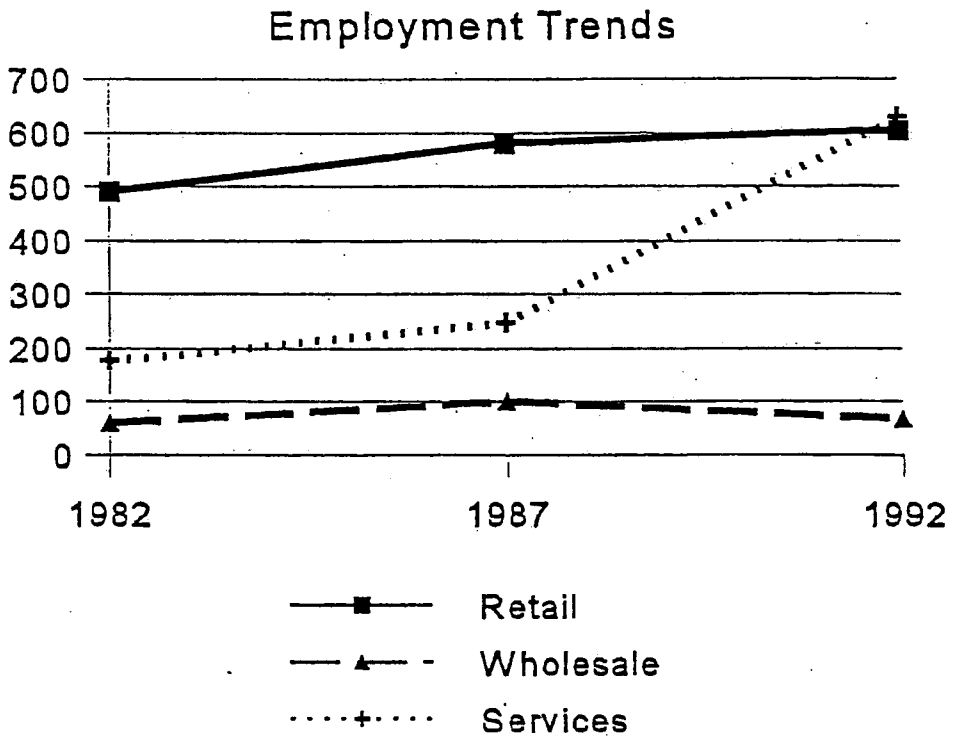


TABLE XII
FAIRFIELD COUNTY
TRENDS IN BUSINESS, EMPLOYMENT
AND SALES, 1982-1992

	Business Establishments*		
	1982	1987	1992
Wholesale Trade	14	17	9
Retail Trade	90	90	86
Service Industry	45	48	55
Total	149	155	150
	Employment		
Wholesale Trade	60	101	68
Retail Trade	491	491	605
Service Industry	177	248	629
Total	728	930	1302
	Annual Sales (000)		
Wholesale Trade	$19,389	$18,202	$17,788
Retail Trade	37,920	60,784	57,369
Service Industry	5,231	7,528	18,898
Total	$62,540	$86,514	$94,055

*Establishments with payrolls.

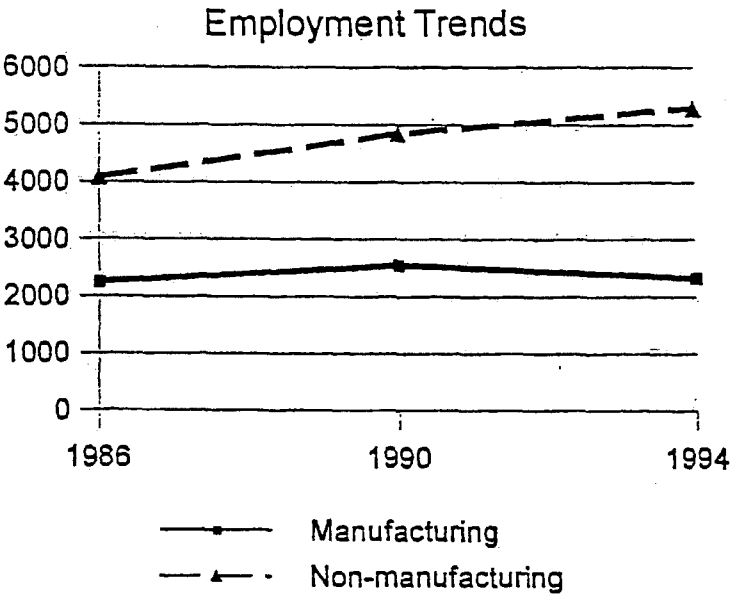


TABLE XIV
FAIRFIELD COUNTY
NON-AGRICULTURAL WAGE AND SALARY
EMPLOYMENT TRENDS, 1986-1994

	1986	1990	1994
TOTAL	6,330	7,400	7,620
Manufacturing	2,250	2,550	2,330
Non-manufacturing	4,080	4,850	5,290
Construction & Mining	270	350	370
Transportation & Public Utility	1,060	920	1,060
Wholesale & Retail Trade	670	1,040	1,180
Finance, Insurance & Real Estate	150	110	100
Services (1)	810	1,130	1,070
Government	1,110	1,300	1,520

(1) Included in services are those services related to agriculture, as well as the wide range of services to individual and business establishments.

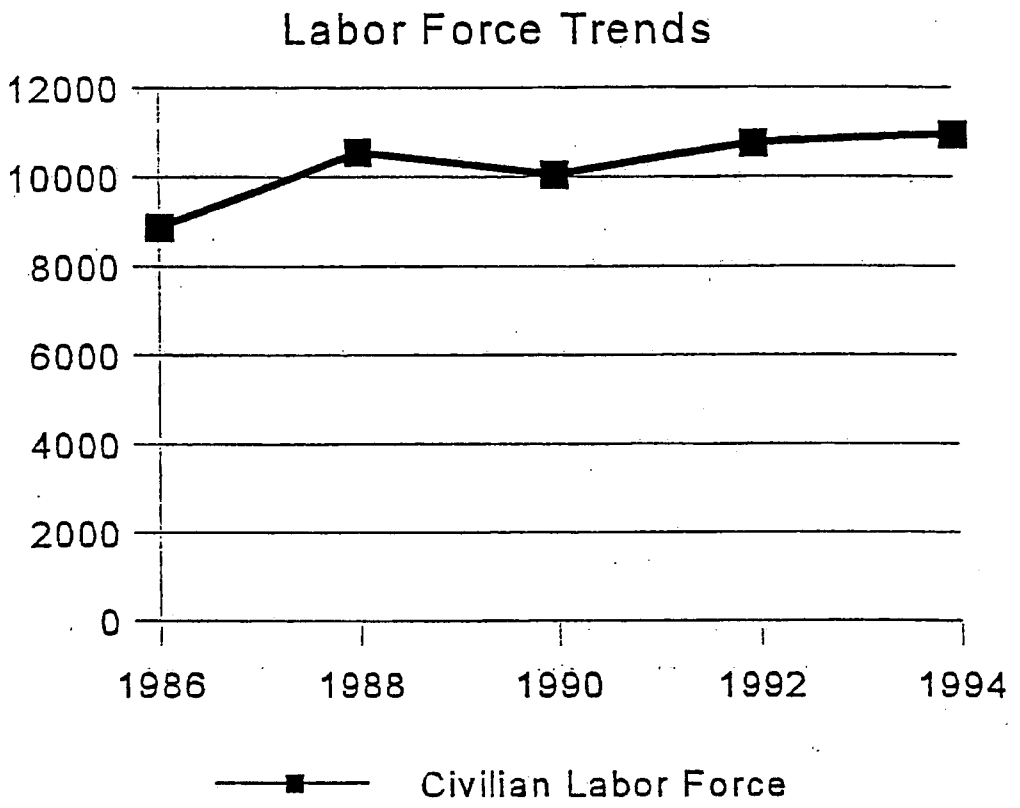


TABLE XVI

FAIRFIELD COUNTY
LABOR FORCE TRENDS, 1986-1994

	Annual Average				
	1986	1988	1990	1992	1994
Civilian Labor Force	8,880	10,550	10,050	10,760	10,960
Employment, Total	8,090	9,960	9,100	9,790	9,890
Unemployment	790	570	950	970	1,070
Percent Labor Force	8.9%	5.4%	9.5%	9.0%	9.7%

Source: S.C. Employment Security Commission, South Carolina's Labor Force in Industry.

SECTION II

ENVIRONMENTAL FEATURES

There are numerous natural environmental conditions that influence the potential use of land. Man has little short-run control over such conditions as climate, geology, soils, wetlands, flood waters, topography, etc. Yet these conditions can and often do present engineering, safety, and economic barriers which limit development potential. Further, unwise use of land in "environmentally sensitive areas" may harm or destroy valuable natural resources. Thus, it is important, from a planning and development perspective, to be aware of the presence and extent of environmental constraints and resources.

This section will dimension such features and conditions to determine their impact on existing and future development in Fairfield Couty.

POSITION IN THE STATE

Fairfield County is positioned on the divide between the Piedmont and the Sandhills. The majority of the county is in the Southern Piedmont Land Resource Area, but about 2,000 acres in the southeast corner lie within the Sand Hills Area.

Fairfield County is located in the Central Midlands Region of South Carolina and lies principally between Chester and Richland Counties north to south, and Kershaw and Newberry Counties east to west. The elevation of the county ranges from slightly less than 200 feet at the confluence of the Broad and Little Rivers to about 625 feet in the upper part of the county.

The county is situated on I-77, between the larger market areas of Columbia and Charlotte, North Carolina, in a position to capitalize on the economic expansion of and growing ties between the two areas.

CLIMATE[2]

Fairfield County, like the rest of South Carolina, has a temperate climate. This is typified by ample rainfall in all seasons, short and usually mild winters, and long, warm summers.

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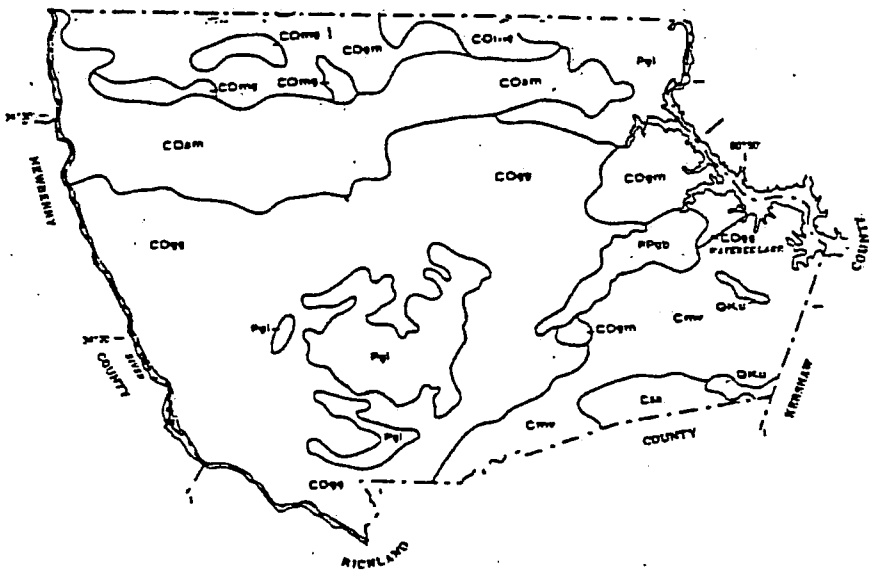
2 U. S. Department of Agriculture, SCS, Soil Survey of Chester and Fairfield Counties, South Carolina, 1982.

Intrusive granite and metamorphic granite are generally high in silicate minerals and feldspar and include some mafic minerals. Both are resistant to weathering except where fractured.

Two different geologic units of gneiss, mica gneiss and granitoid gneiss, occur in Fairfield County. Gneiss is a metamorphic rock consisting of various granular minerals in alternate bands. Mica gneiss is dominantly mica but also contains large amounts of feldspar and quartz. Granitoid gneiss has a considerable amount of quartz. Mica gneiss weathers at a moderate rate, but granitoid gneiss is resistant to weathering.

LEGEND

QKu	Coastal Plain
PPgb	Gabbro
Pgi	Intrusive Granite
COgm	Metamorphic Granite
COgg	Granitoid Gneiss
COmg	Mica Gneiss
COam	Amphibolite
Csa	Slate and Argillite
Cmv	Metavolcanic Rock



SOILS[4]

Soils generally are assessed in terms of their suitability for agricultural purposes and/or urban development---two extreme or opposite uses. Unfortunately, lands best suited for agricultural use have the fewest constraints to urban development. And since development generally follows the path of least resistance, other factors being equal, there is always the potential for conflict whenever such lands exist in an urbanizing environment.

There are 11 soil associations or groups in Fairfield County, with differing characteristics. They are general by definition, requiring more site specific analysis for individual properties, but are helpful as a guide to development, which is the intent of this Plan. A brief description of each follows.

4 Ibid.

Cataula, 13 percent Winnsboro, and 6 percent is soils of minor extent.

All these soils are well drained. Wilkes soils are moderately deep, are moderately permeable with brown or olive subsoil. Cataula soils are deep, have a red subsoil, and are slowly permeable. Winnsboro soils are deep, slowly permeable, and have a brown subsoil.

Cataula soils and the gently sloping and sloping Winnsboro soils are on narrow to broad irregularly shaped ridgetops. Wilkes soils and the moderately steep Winnsboro soils are on side slopes adjacent to drainageways.

This unit is mainly pasture and woodland. Some tracts are cultivated. Slope is the main limitation for cultivated crops. A restricted root zone is a limitation in Cataula soils.

In Wilkes soils and the moderately steep Winnsboro soils, suitability is poor for crops and pasture because of the slope. In Cataula soils and the gently sloping Winnsboro soils, it is good to fair for crops. Suitability is fair for woodland throughout and is generally poor for residential and other urban uses.

4. Wilkes-Winnsboro-Mecklenburg

These are well drained, gently sloping to steep, moderately deep and deep clayey soils. These soils occur as broad areas throughout Fairfield County, comprising about 23 percent of the soils. About 49 percent of this association is Wilkes soils, 34 percent Winnsboro, 8 percent Mecklenburg, and 9 percent is soils of minor extent.

All these soils are well drained. Wilkes soils are moderately deep, have moderately slow permeability, and have a brown or olive subsoil. Winnsboro soils are deep, have slow permeability, and a brown subsoil. Mecklenburg soils are deep, have slow permeability and red subsoil.

This unit is mainly pasture and woodland, although some tracts are cultivated.

In Wilkes soils and the moderately steep Winnsboro soils, suitability is poor for crops and pasture because of the slope. In Mecklenburg soils and the gently sloping and sloping Winnsboro soils, it is good to fair for crops. Suitability is fair for woodland throughout the unit. It is poor for residential and other urban uses in most areas because of the steepness of slope, but it is fair in Mecklenburg soils and the gently sloping and sloping Winnsboro soils.

suitability is poor for crops and fair to poor for pasture because of slope and droughtiness. Suitability is good to fair for woodland throughout the unit. It is poor for residential and other urban uses in the moderately steep or steep Rion and Wateree soils, but it is good to fair in the rest of the unit.

7. Cecil-Pacolet-Appling

These are well drained, gently sloping to moderately steep, deep clayey and loamy soils. They are found throughout Fairfield County. They make up about 19 percent of the soils. Forty-six percent of the unit is in Cecil soils, 32 percent in Pacolet, 6 percent in Appling, and 16 percent in soils of minor extent.

These soils are well drained, deep, and moderately permeable. Cecil and Pacolet soils have a red subsoil. Appling soils have a yellow or yellowish red subsoil. Cecil and Appling soils are on moderate to broad ridgetops. Pacolet soils are found mainly on side slopes adjacent to drainageways.

This unit is mainly pasture and woodland, however, some tracts are cultivated.

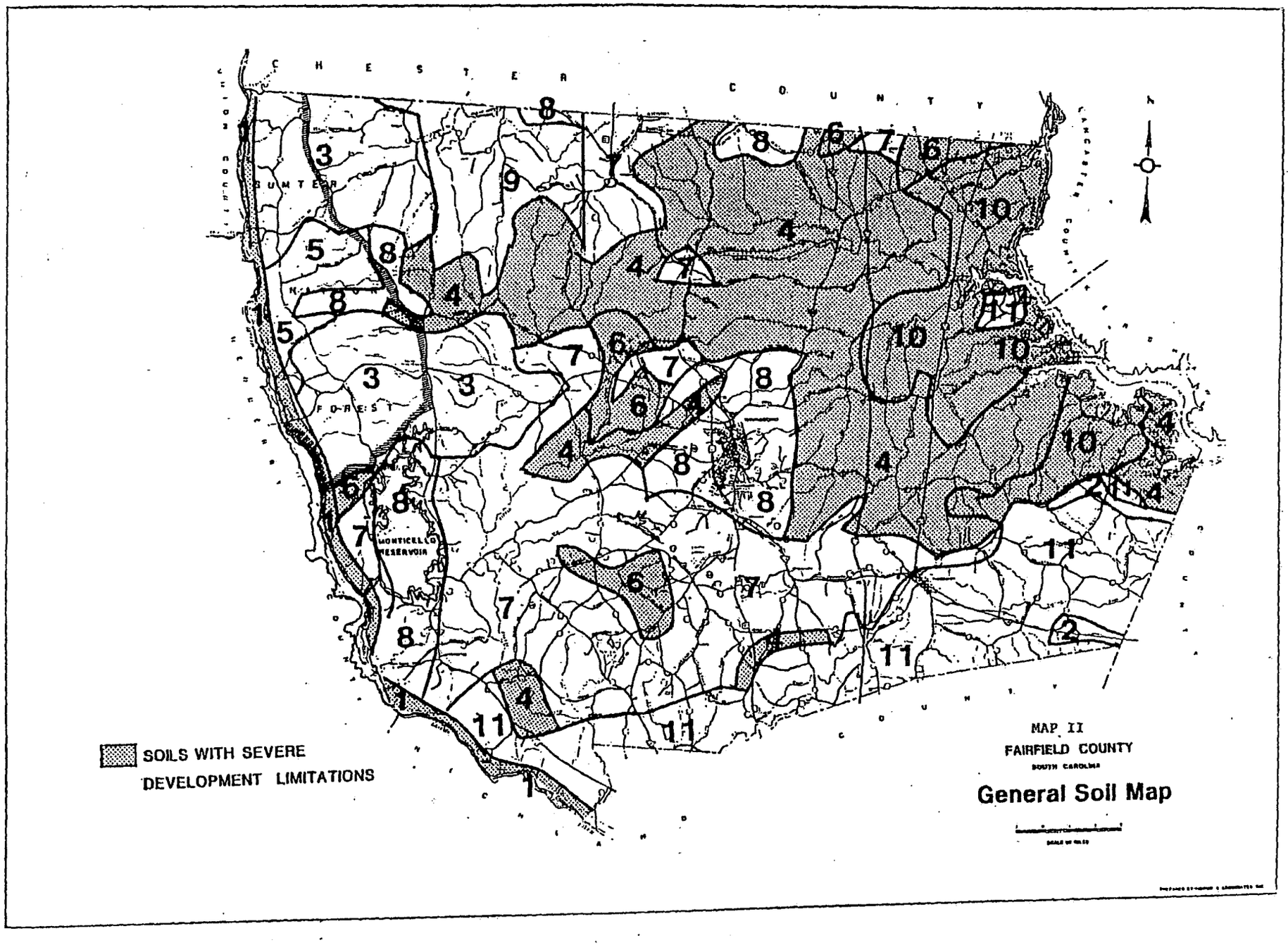
Cecil and Appling soils are rated good to fair for crops and pasture. Pacolet soils are generally unsuited for crops and pasture because of slope. Suitability is good for woodland throughout the unit. It is good to fair for residential and other urban uses in Cecil and Appling soils, but relatively poor in Pacolet soils.

8. Madison-Cecil-Hiwassee

These are well drained, gently sloping to moderately steep, deep clayey soils. They make up about 10 percent of the county's soils. About 40 percent of this unit is in Madison soils, 15 percent in Cecil, 14 percent in Hiwassee, and 31 percent in soils of minor extent.

All these soils are deep, well drained, moderately permeable, and have a red subsoil. Hiwassee soils, and the gently sloping and sloping Madison soils are found on narrow to broad ridgetops. Moderately steep Madison soils are on side slopes adjacent to drainageways.

This unit is mainly in pasture and woodland although some tracts are cultivated. Suitability for crops and pasture is generally good to fair. Suitability is good for woodland throughout most of the unit. Suitability for residential and urban uses is good to fair.


CHESTER COUNTY
SUMTER
FOREST
MONTICELLO RESERVOIR
SOILS WITH SEVERE DEVELOPMENT LIMITATIONS
MAP II
FAIRFIELD COUNTY
SOUTH CAROLINA
General Soil Map

prepared by the U.S. Department of Agriculture.

To the extent practical, policies and regulations should be designed to channel future development away from areas with severe soil conditions or impose building requirements that would properly overcome any limitations. Such development guidelines should:

1. discourage or prohibit large scale urban development in areas without public sewage facilities;

2. mandate tie-ons where existing development may be served by a community sewerage system;

3. monitor development in flood plain and wetland areas;

4. require developers to satisfactorily "overcome" severe soil conditions so as not to adversely affect surrounding properties.

Soils Best Suited To Agricultural Use

Agricultural land or land with agricultural potential may be classified in two categories, prime farmland and additional farmland. Prime farmland accounts for 14 percent of the total land area in Fairfield County. It is defined as soils having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. Additional farmlands of statewide importance comprise another 85,509 acres. They are defined as lands that will economically produce high yields of crops when treated and managed according to acceptable farming methods.

All these lands are not actively cultivated at this time however, according to the latest Census of Agriculture (1987), which shows only 57,293 acres of farmland, with only 19,360 acres in cropland.

Table XVII

Fairfield County
Soil Suitability for Agricultural Purposes

	Acres	% Total
Prime Farmland	59,590	.14
Additional Farmland	85,509	.20

Source: U.S. Department of Agriculture, Important Farmlands Map 1984.

Prime farmlands are found principally in the southeastern part of the county and around the Town of Winnsboro. They are concentrated south of Winnsboro and S.C. 34 east of Winnsboro to the Kershaw County Line. They are also found in pockets around Lake Wateree and in the northeast corner of the county, south of the Mitford community.

Additional farmlands of statewide importance are generally mingled throughout the prime farmland areas, and extend in scattered form beyond such areas, west and north of Winnsboro, and in the vicinity of Dutchmans Creek.

Summary Recommendations

In sum, the soil information presented herein is valid for general planning purposes. But because each association has several different soil types, with varying properties, it is imperative that detailed soil borings and tests be made to determine specific limitations and the degree of such limitations before building on or abandoning a potential site. Additional information and assistance are available from the local U.S.D.A. Soil Conservation Service Office.

TOPOGRAPHY

Topographic conditions, or slope characteristics, can have a profound influence on development, both in terms of potential use and development costs. As slopes become steeper, development costs may increase accordingly, while the uses to which the land may be put may decrease.

The major environmental concerns associated with new development on steeply sloped land is the potential for soil erosion. The Soil Conservation Service (SCS) has identified slope constraints to urban development in 33 of the 42 soil types in the county. Of these, 22 percent have severe slope characteristics.

Just as is the case with steep slope land, low to no slope land also may hinder urban development. Large expanses of flat land may be poorly drained. Often, flat land development requires extensive drainage networks; and in the case of flood plain property, costly dikes may be necessary. Fortunately, there is virtually no "table-top" flat land of any consequence in Fairfield County. Just as fortunately, the county has few areas so extensively sloped as to preclude urban development. But there are concerns that development practices adequately address slope conditions in Fairfield County so as not to create any drainage, erosion or sedimentation problems.

morphological, physiological, and/or reproductive adaptation(s) have the ability to persist in anaerobic soil conditions."

Evidence of a minimum of one wetland indicator of either of the three parameters must be found for a site to be designated a wetland. This technical approach should always be applied, unless indicators of one or more parameters cannot be found due to human activities such as land clearing and deposition or fill.

Wetlands generally are found in low-lying areas around creeks and rivers. The USDA, S.C. Soil Survey of Chester and Fairfield Counties, has identified four soils in Fairfield as characteristically wet. They are Armenia, Chewacla, Irdell and Helena.

The U.S. Corps of Engineers, in conjunction with other federal and state agencies, is in the process of mapping all such areas in South Carolina, and has completed mapping for the coastal counties. But, wetlands mapping of Fairfield County has yet to be scheduled.

This does not relieve developers of the responsibility under the new law of securing a "determination of wetlands" from the Corps in the event of their existence. Persons intending to engage in activities involving development within or adjacent to wetlands, as herein defined, should contact the Corps of Engineers for a precise determination of jurisdiction and the consequences of such development.

Jurisdictional Wetlands

Not all wetlands development will require a permit from the Corps. However, no permit will be issued where wetlands are considered and have been determined by the Corps to perform functions important to the public interest. This includes:

(a) Wetlands which serve significant natural biological functions, including food chain production, general habitat and nesting, spawning, rearing and resting sites for aquatic or land species;

(b) Wetlands set aside for study of the aquatic environment or as sanctuaries or refuges;

(c) Wetlands the destruction or alteration of which would affect detrimentally natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics;

Drainage Prevention Ordinance, to control the development of such areas.

Following this initial move to meet the minimum requirements for participation in the National Flood Insurance Program (NFIP), the county may wish to consider upgrading its Flood Hazard Rating to secure greater savings to those requiring flood insurance.

Under a new community rating system, (CRS), insurers may qualify for 5 to 40 percent savings on their flood policies, depending on the county's classification.

The new "bonus" program is modeled after the ISO (Insurance Service Office) Commercial Risk Services' fire insurance classification program. CRS has 10 classifications from Class 1 to Class 10. As a community or county takes certain steps to reduce the hazards of flooding beyond the minimum to participate in the Flood Insurance Program, it may qualify for a lower rating. Currently, Fairfield County has a Class 10 rating under the new system, but may qualify for a Class 9 rating with only limited improvements or amendments to its current ordinance. This determination may be made with the use of a "Class 9 Quick Check", developed by NFIP.

Clearly, the opportunity to reduce the hazards of flooding and the cost of flood insurance at the same time is worth pursuing although the extent of such conditions is relatively limited in Fairfield County, confined almost exclusively to creek and river beds. It just makes sense.

SECTION III

LAND USE AND INFRASTRUCTURE

That existing land use patterns and infrastructure influence development is clearly evident. Like uses generally attract like uses. Development is dependent on infrastructure. Established commercial areas generally appeal to new commercial development; prestigious residential subdivisions attract new quality residential construction; and many industrial uses seek out the same facilities and areas for development.

It is essential, therefore, to have a thorough understanding of existing land usage, land use patterns, and existing and planned infrastructure in order to adequately assess those areas of the county in which future growth may be expected. A knowledge of "accepted" land use conditions also helps determine the degree of departure, if any, from established patterns of growth and intensity which may be applied to presently undeveloped areas. Toward these ends, a land use and infrastructure survey, inventory and assessment are included as part of this study.

EXISTING LAND USE

As stated previously, Fairfield County has about 438,425 acres. It ranks 18th in area among the state's 46 counties.

The largest single use of land is forest, accounting for 87 percent of the total. This includes all public, commercial and non-commercial forests, as well as farm woodlands. Non-forested land, including urban or developed land greater than 10 acres account for the remaining 13 percent of the county.

About three percent of the forested land is in public ownership. The largest is the Sumter National Forest in the northwestern part of the county. Private ownership of forested land is dominated by corporations, individuals and the forest industry. Only six percent of the county's forested land is owned and managed by farmers.

Developed or urban land use comprises only two percent of the county. It is centered in and just beyond the Town of Winnsboro. Urban concentrations are also found along the shores of Wateree Lake, around Ridgeway, in the Mitford community, and to a lesser extent around parts of Monticello Lake and Jenkinsville.

Water areas comprise about four percent of the county, principally in the form of Lake Wateree and the Catawba River, in the eastern extremity, and the Monticello Reservoir and Broad River in the western extremity.

Farm Use

The amount of agricultural and farmland has been on the decline since the days of the depression. A recent indicator of this trend is shown by Table XIX. Over a nine year period, between 1978 and 1987, the county lost nearly 20,000 acres of farmland. This was accompanied by a seven percent decline in the number of farms and a 19 percent reduction in the average size of farms. Also, the number of farmers engaged principally in farming declined by 13 percent.

The dominant use of farmland is in forest acreage, in spite of a 37 percent decline between 1978 and 1987. Pasture land, both cultivated and wooded, comprises the second major use of farmland. Only nine percent of the land in farms is devoted to harvested crops, while 16 percent is in other uses.

Neither agricultural land use nor production commands a prominent position in Fairfield County. In comparison with other counties in the state, it ranks no higher than 41st in farmland acreage or market value or products sold, while ranking 18th in total area.

Urban and/or Developed Land Use

Estimates from Table XVIII show the amount of urban and/or developed land to be approximately 7,350 acres, based on population concentrations of 10 or more acres. These measurements were computed by the Soil Conservation Service from detailed Soil Surveys, using a 10-acre grid system. Development of less than 10 acres was not computed.

A second estimate employing "per capita land usage ratios", establishes the number of acres in urban or developed land at about 6,900. This estimate is based on a ratio of 0.308 acres per person (22,295), derived from comparable land use studies. It tends to validate the estimates generated by the Soil Conservation Service, suggesting a range between the two.

Urban or developed land consists principally of four broad based land use categories: residential, commercial, industrial and service (public and/or private), i.e. religious, medical, governmental, utilities, transportation, etc. A description of their location and specific characteristics within Fairfield County follows.

General observations reveal:

* Scattered development with concentrations around the seat of county government (Winnsboro) and smaller community clusters, i.e. Ridgeway, Mitford, Jenkinsville.

* Expanses of undeveloped, wood and farm lands.

* Relatively intense development along the Winnsboro By-pass.

* General mixing of development in the unincorporated and unregulated municipal fringe, south of Winnsboro.

* Weak design and construction of most county maintained and farm-to-market roads.

* An influx of alternative low-cost housing in the form of mobile homes.

* Scattered pockets of substandard housing and living conditions.

* An historical presence.

* Underdeveloped resources.

* Rural charm.

* Concentrated development along the shores of Lake Wateree.

* Resource and unfulfilled development potential of the Monticello Reservoir.

* Vital linkage and enhanced accessibility provided by I-77; and

* A bustling industrial complex south of Winnsboro.

Residential Land Use

As mentioned previously, the dominant form of residential use is conventionally built, single-family detached housing. But mobile homes and other manufactured structures are rapidly adding to the county's housing stock. Even multi-family housing is now available in the fringe areas of Winnsboro, where municipal infrastructure is available.

Mack Trucks, Rite Aid, the JPM Company, Standard Products, Uniroyal, Carolina Apparel, the Manhatten Shirt Company, Hon Furniture, Copian Industries, etc. are all located in the unincorporated areas. As a general rule, industry, distribution and warehousing operations tend to locate in proximity to but beyond corporate municipal areas. Such is the case in Fairfield County, where the vast majority of such operations are located.

Recent industrial trends show significant development in the areas south and southeast of Winnsboro, as reflected by the existing land use map.

Service Land Use

Service land uses are scattered throughout the county. They include churches, schools, utilities, governmental buildings and facilities, parks, etc.

Ramifications

Existing land use patterns account for a number of common land use problems, such as incompatible mixed land usage, neighborhood instability, traffic congestion, and strip commercial development.

Mixed land usage and the associated problems of land use incompatibility are found to the north and south of Winnsboro. Much of this is due to the transitional process of older homes giving way to commercial enterprises and other uses. Residential uses are not sufficiently insulated and protected from the negative impact of change occurring around them.

Residential stability is constantly under siege in unprotected transitional areas, such as those south of Winnsboro. Lower intensity uses, i.e. single-family dwellings are pressured for higher intensity development.

Land use intensity, curb cuts, and street alignments have a profound influence on traffic conditions. And there are examples around Winnsboro where improper alignments, excessive or expansive curb cuts, and high intensity development have contributed to traffic congestion and safety hazards.

Strip commercial development is evident and is intensifying along the By-pass. Such development affects not only the movement and safety of traffic, but challenges the purpose of the By-pass, which is to expedite the movement of traffic around the congested center of town. If volumes and congestion along the By-pass reach or surpass those on the original route through Winnsboro, the objective is partially compromised. This is not to say that the By-pass has not served a useful purpose,

TABLE XX

ROADWAY LEVELS OF SERVICE DESCRIPTIONS

Level of Service A

* Free flow conditions
* Low volumes
* High operating speeds
* Uninterrupted flow
* No restriction on maneuverability
* Drivers maintain desired speed
* Little or no delays

Level of Service B

* Stable flow conditions
* Operating speeds beginning to be restricted

Level of Service C

* Stable flow but speed and maneuverability restricted by higher traffic volumes
* Satisfactory operating speed for urban conditions
* Some delays at signals

Level of Service D

* High density, but stable flow
* Restricted speeds
* Noticeable delays at signals
* Little freedom to maneuver

Level of Service E

* Low, but relatively uniform operating speeds
* Volumes at or near capacity
* Approaching unacceptable delays at signals

Level of Service F

* Forced flow conditions
* Stop and go operation
* Volumes below capacity, may be zero
* Average vehicle delay at signals is greater than one minute

Still, all major roadways should be monitored for change, based on traffic volume increases recorded on selected roadways during the 80s (Table XXI). Traffic on I-77 increased by nearly 350 percent between 1981 and 1990. Much of the increase was due to shifting traffic from parallel roadways, U.S. 321 and U.S. 21, where traffic decreases were recorded.

Other, more internal oriented routes also recorded increases, but none as large as those on I-77. S. C. 34 recorded a significant increase between Winnsboro and I-77, and between Ridgeway and Lake Wateree, but only a slight upward move west of Winnsboro.

Traffic on Old River Road increased as a result of interstate accessibility, along with traffic along River Road, due to increased building on Lake Wateree. West of Winnsboro, traffic volume changes were minor by comparison.

From the traffic volume data recorded during the last decade (1981-90), it is obvious that most development activity is taking place south and east of Winnsboro, with few changes occurring to the north and west. And future traffic volume changes on the major roadways in these areas should be carefully monitored to protect their carrying capacity for projected growth and development.

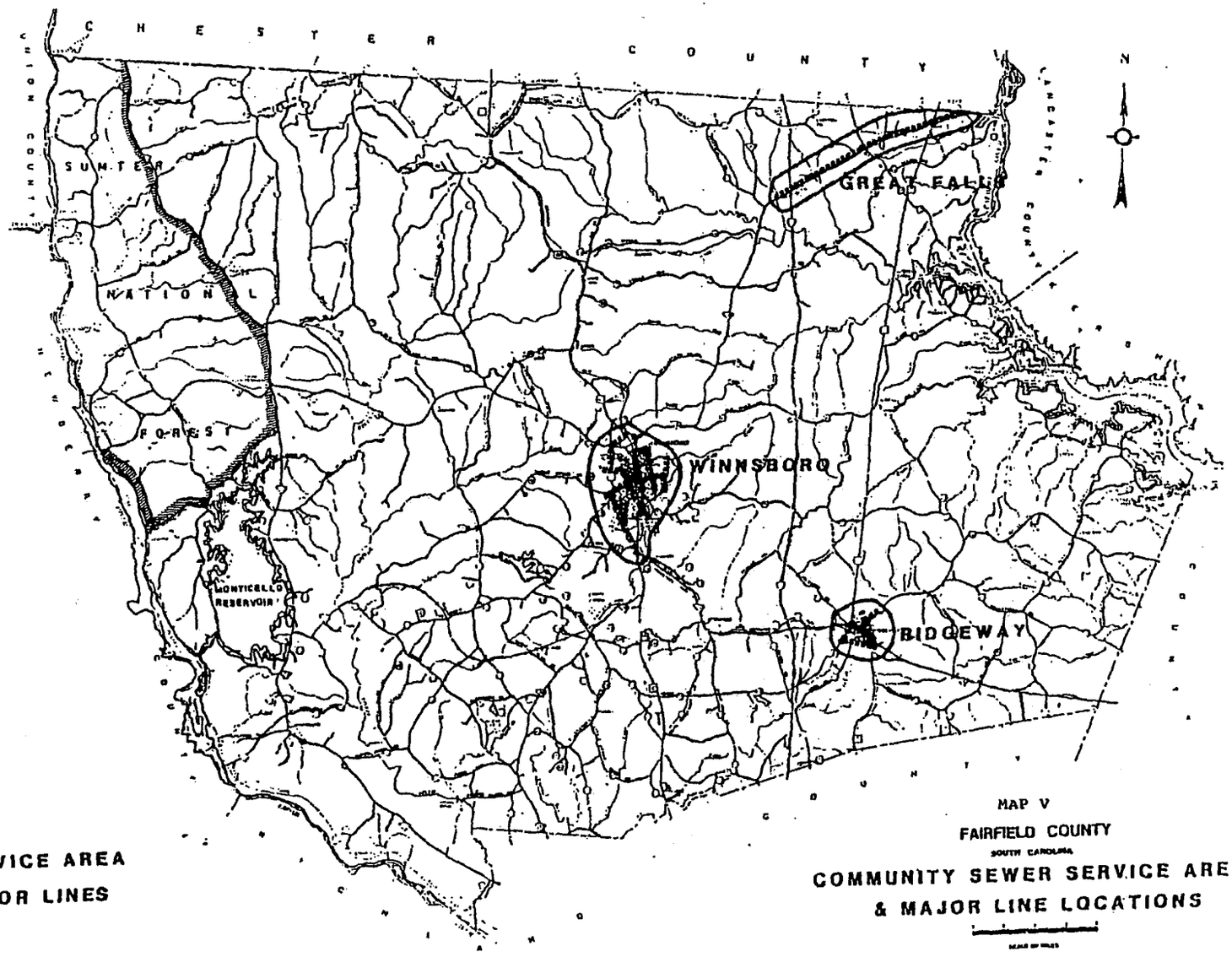
Water Supplies

There are five public water systems in the county serving approximately 51 percent of the population. Additionally, less than two percent receive water from private residential systems. The balance relies on individual wells.

The five public providers are (1) the Town of Winnsboro, (2) the Town of Ridgeway, (3) the Jenkinsville Water District, (4) the Mid-County Water District, and (5) the Mitford Water District. Of the five public providers, only the Town of Winnsboro draws from a surface supply. The source is from a reservoir in the Jackson Mill Creek watershed, west of Winnsboro.

The reservoir contains about 600 million gallons of water, of which approximately one million gallons per day are consumed. The Town's treatment plant has the capacity to process about two MGD, with about 50 percent excess capacity for growth and new development at this time.

The other four public systems draw from groundwater sources, which have a relatively low yield in Fairfield County. Still, each of the systems is currently operating below capacity, with room for additional growth and development, albeit minimal by comparison with Winnsboro's surface water supply.



SERVICE AREA

MAJOR LINES

MAP V

FAIRFIELD COUNTY

SOUTH CAROLINA

COMMUNITY SEWER SERVICE AREAS

& MAJOR LINE LOCATIONS

Natural Gas

Natural gas is supplied to the county by the South Carolina Pipe Line Company serving Richtex and SCANA's Sumner Power Plant, west of S.C. 215. The pipeline company also wholesales gas to the Town of Winnsboro which retails and distributes it along U.S. 321 south and west of Winnsboro, and within the Winnsboro area. The town is also in a position to extend natural gas to other areas of the county in support of development, as economically feasible.

While not essential to all industrial operations, the availability of natural gas is a definite plus when recruiting industrial prospects and promoting economic development.

Fire Protection

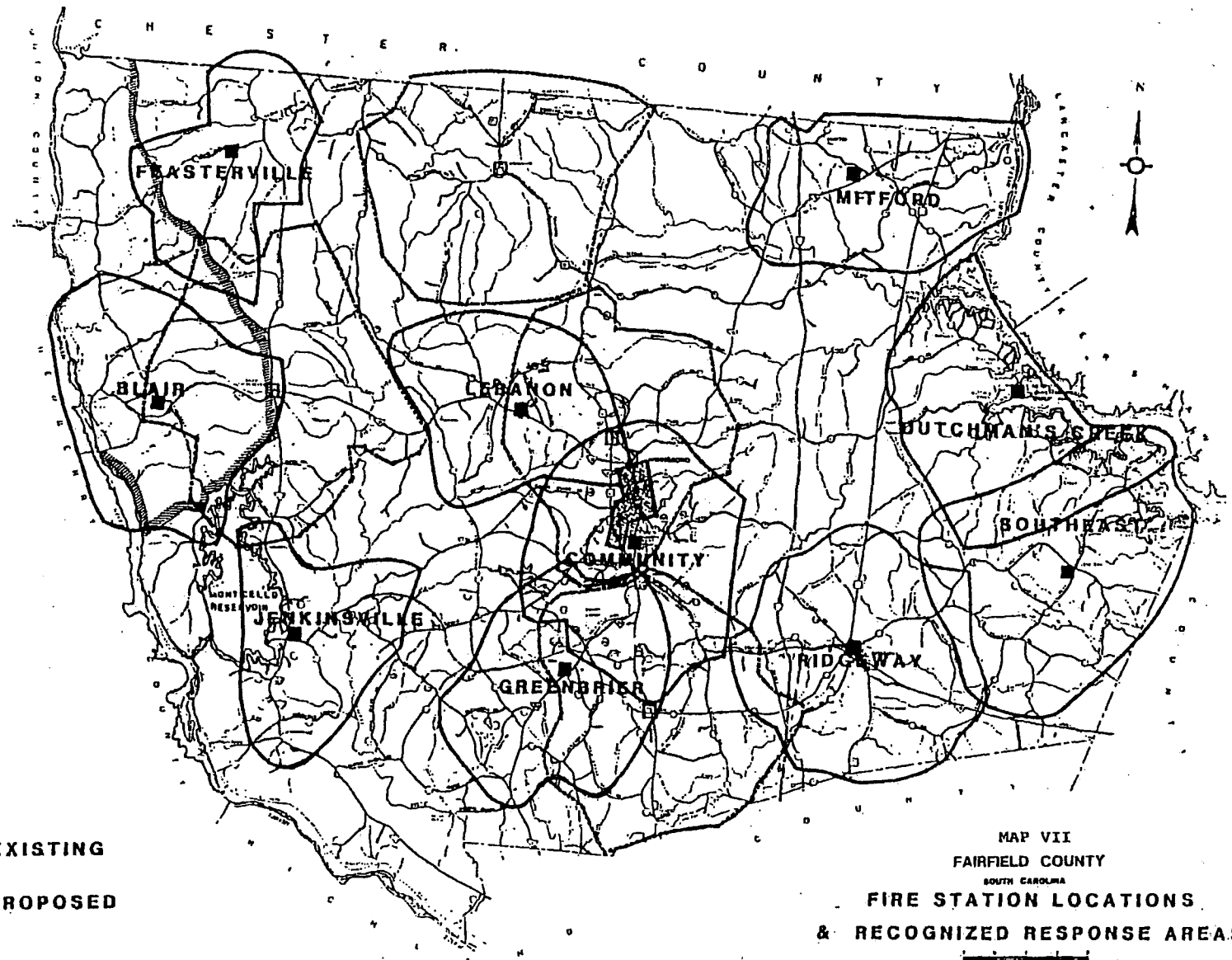
The availability and level of fire protection has a direct bearing on the security of life and property, and the cost of insurance premiums. As such, it is a matter of considerable concern where development is contemplated, especially multi-million dollar industrial and/or commercial investments.

Fire protection in Fairfield County is provided by the public safety department of the Town of Winnsboro and ten stations operated as part of the county fire service. The county fire departments are funded directly by Fairfield County in its operating budget, out of the proceeds of a 3.1 mill fire tax. The Winnsboro Public Safety Department is funded from the budget of the town, supplemented by fire protection contracts. Some of the individual fire departments in the county are engaged in separate fund raising activities, but most of their apparatus and buildings are owned, and their operating expenses paid by the county.

The 10 stations in the county system are:

Community
Greenbrier
Southeast
Dutchman's Creek
Ridgeway
Jenkinsville
Mitford
Lebanon
Blair
Feasterville

All of the departments except Winnsboro, Community, Ridgeway, and Mitford are rated Class Nine. The district covered by the Winnsboro Fire Department is rated Class Five, although some properties located beyond 1,000 feet of a fire hydrant carry



EXISTING

PROPOSED

MAP VII
FAIRFIELD COUNTY
SOUTH CAROLINA
FIRE STATION LOCATIONS
& RECOGNIZED RESPONSE AREAS

Source: Fire Protection Master Plan, Eckman & Associates.

SECTION IV

LAND USE FORECAST

Forecasting the need for and location of land for future development is one of the principal objectives of any land use plan. But, there are no exact standards by which to measure this need. The amount of land required to support the population of a big city, for example, is considerably less per person than the average amount consumed in Fairfield County. It is a matter principally of land availability and economics.

One fairly reliable method for use in determining future land use needs in the county is to relate land use to population. Over the years, our firm has compiled land use and population data from over 30 local surveys. We have found the average consumption of land in unincorporated areas to be approximately .34 acres per person, allocated among the four basic land use classifications as follows:

Table XXIII

Land Use Classification	Land Use Requirements (acres per person)	Percent of Development
Residential	.21	62.0
Commercial	.01	3.0
Industrial	.08	24.0
Service	.04	11.0
TOTAL	.34	100.0

Source: Vismor & Associates, Inc.

Using these allocations for Fairfield County we estimate that about 512 additional acres will be developed by the year 2000, and an additional 340 acres by the year 2010. Not all of it will come from the rural register, of course. There will be some in-filling of existing subdivisions and development in built-up areas around Winnsboro, effectively reducing the need for raw undeveloped land. Still, the impact will be measurable.

Residential use should comprise approximately 62 percent of all new development, accounting for approximately 430 additional acres by the year 2010.

intense in areas outside of Winnsboro, and at I-77 interchange locations.

The amount of service land needed through time, again, is directly related to the amount of land used principally for residential purposes. The need in the county is projected to be only 95 additional acres by the year 2010. This includes social, medical, recreational, governmental, religious, and related uses. Many of these uses will continue to be found in the county's two municipalities, thus minimizing their impact in the unincorporated areas.

SECTION V

PLANNING ISSUES AND OBJECTIVES

CITIZEN PARTICIPATION IN THE IDENTIFICATION OF ISSUES AND NEEDS

One of the principal objectives of this program is to provide ample opportunity for citizen participation in the planning process---to allow the public to help identify issues and problems that should be addressed by the Plan. Toward this end, the Planning Commission conducted three public "in-put" meetings in various parts of the county. The meetings were held in Ridgeway, Monticello and Winnsboro. Additionally, a select group of students and teachers were surveyed in the same manner to determine their concerns for the future, and how this planning program should address them.

The format consisted of a presentation by the Commission and its consultant-staff. The presentation consisted of factual background data on trends and conditions within the county, followed by population and development forecast for the various geographic areas. Constraints to and capabilities of development were outlined, and preliminary issues identified.

Having briefed or primed the audience, the agenda then focused on citizen participation. To aid in the process, a survey questionnaire was used to guide the discussion. The questionnaire enlisted participation in the identification of community needs and issues, and solicited guidance in charting a course of action to be taken by the Planning Commission and County Council in addressing such needs and issues.

A total of 121 persons participated in the process. While the number is relatively small, and their views may not be considered a mandate, clearly they represent a "good indication" of what needs to be done to improve and enhance the development process through planning and subsequent implementing activities.

As issues, needs and problems tend to vary from area to area, the questionnaire focused on (1) area identification of the respondent and (2) needs within such area. The areas divided generally along the following lines:

Area	Description
1	East of Winnsboro, including Lake Wateree, Simpson, Rockton and Ridgeway.

TABLE XXV

CITIZEN'S RESPONSES TO PLANNING AND DEVELOPMENT ISSUES AND NEEDS

NEED TO:	YES	NO	NOT SURE
(1) Protect existing neighborhoods, subdivisions and homes from incompatible development?	.87	.08	.05
(2) Protect "prime" farmland?	.74	.12	.14
(3) Regulate development around Lake Monticello and Lake Wateree?	.67	.08	.24
(4) Guide the location and regulate the siting of mobile homes and mobile home parks in the county?	.63	.23	.14
(5) Regulate the location of billboards and outdoor advertising signs?	.66	.12	.22
(6) Regulate development along major streets and roads to ensure safety, and movement of traffic along existing and proposed highways?	.80	.07	.12
(7) Identify and protect for future industrial development, sites with industrial potential?	.60	.07	.31
(8) Require landscaping as part of any new large scale industrial or commercial use?	.69	.13	.17
(9) Adopt guidelines for the location and development of certain land uses which could have a negative impact on the county, such as landfills, hazardous waste dump sites, race tracks, mining operations, nuclear plants, etc.?	.81	.04	.14
(10) Regulate the impact of development on the county's natural resources and environmental amenities?	.74	.05	.21

Source: Responses from 121 persons at three public hearings conducted by the Fairfield County Planning Commission and a select group of students and teachers. Responses expressed by percentage participants.

(9) Mitford
(10) White Oak
(11) Lebanon

SUMMARY LISTING

From the citizens in-put meetings and the data compiled by this study, we are able to identify a number of broader based issues which should be addressed by this Plan. Development related for the most part, they focus on the impact and siting of new and expanded development, as follows:

(1) Growth
(2) Quality Development
(3) Economic Development
(4) Aesthetics
(5) Transportation
(6) Housing
(7) Infrastructure
(8) Resource Preservation
(9) Recreation

AMPLIFICATION OF ISSUES, OBJECTIVES AND RECOMMENDED RESPONSES

Each of the above broad-based issues is amplified in this section. Here specific objectives are established and appropriate responses to implementation recommended, as follows.

ISSUE: GROWTH

OBJECTIVE: TO ACCOMMODATE PROJECTED GROWTH IN AN ORDERLY MANNER, AND TO AMELIORATE ITS IMPACT ON EXISTING LAND USES AND ENVIRONMENTAL RESOURCES

RESPONSE:

This is a fundamental planning issue. At the core is the approach to be taken by the Planning Commission and County Council. It may opt to continue with its current "hands off" policy, relying principally on developers and market conditions to shape the future of the county, or it may adopt planning policies and land use controls to help guide the development process.

Clearly, the county will have little say in the process, this plan notwithstanding, if it fails to take a stronger position on development issues. But how should the county plan for future development? It should start by building a Plan that recognizes market and economic influences, and channel

development, particularly low-rise, single-family residential uses. Yet, too little attention generally has been given this particular issue.

c. Building Setbacks and Curb Cuts

Setback and curb cut regulations can help limit future spending on highway widening projects, prevent encroachment by neighboring uses, and reduce the hazard of turning maneuvers on major streets and highways.

d. Performance and Siting Standards for Manufacturing Uses

Performance standards can protect against air and noise pollution, vibration, fumes, odor, glare, and other negative by-products of some manufacturing and related uses.

They can also check or substantially modify the location and operation of potentially incompatible uses such as dump sites, salvage yards, hazardous waste facilities, etc.

e. Erosion and Sediment Control

Erosion is a problem in parts of Fairfield County, due to its rolling terrain. And it is often compounded by development, where proper preventive measures are not employed during and after construction. Where there is erosion there is also a problem with sedimentation, drainage and water pollution. Drainage and storm water run off are addressed by the county's Subdivision Ordinance, but the issue of erosion as a negative by-product of the development process remains unaddresssed. To remedy the situation, the county should enact legislation prescribing "best management practices" where earth disturbing development is taking place.

ISSUE: QUALITY DEVELOPMENT

OBJECTIVE: TO FOSTER QUALITY DEVELOPMENT

RESPONSE:

That projected growth will generate new and expanded development is certain. What is not so certain is the quality of that development.

e. To identify and protect industrially suited sites for future industrial development.

f. To create a more favorable environment for existing industry by protecting them from encroachment by potentially incompatible uses.

g. To develop a high profile industrial park.

h. To support and develop a strong agri-business environment, including forestry, farming, housing, etc.

i. To aggressively pursue the development of programs designed to attract "retirees" to Fairfield County.

Currently, the State Development Board and the Economic Development Council of the Midlands represent the county in its efforts to secure new economic development. But more in the way of a county economic development office may be needed. And, indeed, such a move is being considered by County Council.

Additionally, the county should move to create a more favorable industrial climate by protecting potential industrial sites, as well as existing industry.

There are several industrially developing areas south of Winnsboro and along the S.C. 34 corridor between Winnsboro and I-77. Also, some 14 potential sites with approximately 3,500 acres have been listed with the South Carolina State Development Board for industrial development. And the county is considering the development of an industrial park on I-77, between S.C. 34 and Peach Road.

But unless these sites are secured through options or acquisition they may not be available if and when needed for industrial development. And the loss of good industrial sites could compromise the county's ability to secure much needed industry. It is simply not feasible however for the county to purchase and facilitate all properties with industrial potential, or wise to focus its attention solely on the development of one industrial park, although such a facility is needed. Through its regulatory power, the county can protect at no additional cost, those properties judged best suited to industry. Also the county can help maintain an industrial environment for its existing industries by, again, calling on its regulatory power to preclude encroachment by residential and other incompatible uses.

The county may enact land use regulations to protect industrially suited sites exclusively for manufacturing and related uses. Such a measure is strongly suggested by this

establishing a National Homeownership Trust Fund.

Title IV, HOPE Program, providing homeownership and opportunity for people everywhere.

Title VIII, Housing For Persons With Special Needs, providing assistance to the elderly and persons with disabilities.

b. Utilization of existing housing programs, i.e.:

Title V, Housing Assistance-Public, Section 8, and Foster Care Assistance

Title VI, Preservation of Affordable Rental Housing - Prepayment clauses on Section 236, 221(d)3 housing and other preservation provisions.

Title VII, Rural Housing

Title VIII, Housing for Persons With Special Needs - Section 202 and McKinney

Title XI, Community Development Block Grants

c. Greater involvement by local governments, to include:

(1) Inventorying available land for housing development;

(2) Supporting the cost of land planning and engineering to reduce future improvement problems;

(3) Assembling land and clearing titles including lots lost to delinquent taxes and vacant improved lots for in-fill;

(4) Making housing packages available to private developers on a competitive basis; and

(5) Supporting the Building Materials Bank for recycling excess materials from construction sites.

d. Greater involvement by the Central Midlands Regional Planning Council, the private sector and the banking industry.

ISSUE: INFRASTRUCTURE

OBJECTIVE: TO EXTEND WATER AND WASTEWATER SERVICE AND FACILITIES TO ACCOMMODATE PROJECTED GROWTH AND DEVELOPMENT

RESPONSE:

Growth of the county is contingent on the availability of water and sewer. And while prevailing low density patterns over much of it preclude countywide coverage, such facilities are essential to higher intensity development.

With the County Planning Commission responsible for land use planning, five different agents---Winnsboro, Ridgeway, Mitford Water District, Mid-County Water District and the Jenkinsville Water District---responsible for providing water, and three different agents responsible for providing sewer (Winnsboro, Ridgeway, and Great Falls) to the unincorporated areas of the county, the need for a close working relationship among these groups is obvious. One cannot properly function without the other. Cooperation and mutual support are essential to the orderly, planned development of the county, at the most efficient scale.

ISSUE: RESOURCE PRESERVATION AND ENHANCEMENT

OBJECTIVE: TO CONSERVE AND PROTECT THE COUNTY'S NATURAL AND HISTORIC RESOURCES

RESPONSE:

Due to the non-replenishable nature of the county's natural and historic resources, care should be exercised in their use and/or development.

Included among such uses and facilities in Fairfield County are the following:

a. Prime farmlands

b. Water resources; i.e. Lake Wateree, Monticello Reservoir, Winnsboro Reservoir, the Broad River, and smaller creeks and ponds.

c. Historical buildings and places listed by Table XXVII.

d. Woodlands.

TABLE XXVII

INVENTORY OF HISTORICAL PLACES

1. Blink Bonnie
2. Longtown Baptist Cemetery
3. Bryant Hill Cemetery
4. Longtown Presbyterian Church
5. The Dixon House
6. The Hunter House
7. St. Stephen's Episcopal Church
8. Aimwell Presbyterian Church
9. Ruff's Chapel
10. Longleaf
11. Ruff and Company
12. The Century House
13. Ridgeway Baptist Church
14. Mount Hope
15. Cedar Tree
16. Vaughan House
17. Valencia
18. Cason Family Cemetery
19. Durham House
20. Boulware Walls Burying Ground
21. Rocky Mount Battle Marker
22. Johnston Home
23. Rocky Creek Canal
24. Deputary Creek
25. Bethesda Methodist Church
26. Mt. Zion Baptist Church
27. Caldwell House, Mitford Community
28. Grafton House
29. Covenanter Cemetery
30. Covenanter Marker
31. Camp Welfare
32. Mt. Olivet Presbyterian Church
33. White Oak ARP Church
34. Robert E. Patrick Home
35. Galloway-Moore House
36. Concord Presbyterian Church
37. M. T. Patrick Home
38. Lewis Place
39. Calvin Brice Place
40. New Hope ARP Church
41. Dr. Walter Brice House
42. Tom "Shanty" Brice Place
43. Stevenson Home
44. Balwearie
45. Albion
46. The Jane Turner Place
47. Remains of Old Jackson Creek Presbyterian Church
48. The Old Manse
49. Lebanon Presbyterian Church
50. W. K. Turner Home
51. Dr. Hardy Liston Birthplace
52. Martin Place
53. Lemmon Place
54. The Bell Place
55. Happy Valley
56. Salem Presbyterian Church
57. Site of Hans Wagner Fort
58. Old Feaster Cemetery
59. Liberty Universalist Church
60. Feasterville Female and Male Academy
61. The Robert W. Coleman House
62. Clanmore
63. Shelton
64. Cool Branch Baptist Church
65. Beaver Creek Baptist Church
66. Coleman Cemetery
67. Old Yongue Burying Ground
68. Later Yongue Cemetery
69. Mobley Meeting House
70. Means Cemetery
71. Lyles-Feaster Home
72. Ivy Hall
73. Long House
74. Old Lyles Cemetery
75. Rock Creek Baptist Church
76. Fonti Flora
77. McCrorey-Liston School
78. Dawkins House
79. Monticello Methodist Church
80. Davis Plantation Home
81. White Hall AME Church
82. Parr Shoals
83. Chappell Place
84. Mayfair
85. Shiloh Methodist Church
86. Fair View
87. High Point
88. Little River Baptist Church
89. Holley Place
90. Ebenezer ARP Church
91. Kincaid Manor-Heyward Hall
92. Anderson Quarry
93. Union Memorial Presbyterian Church
94. Ashford House
95. Old Horeb Presbyterian Church
96. Site of Mason's Meeting House
97. Trapp Home
98. Crooked Run Baptist Church
99. Bethel Methodist Church
100. Thomas C. Camak Home
101. Brown-Rexrode House
102. Hawthorne-Brown House
103. Warren Castles House
104. Old Furman Building
105. Fairfield Baptist Church
106. The Oaks
107. The Bob Lemmon Place
108. Kelly Miller School
109. Greenbrier Methodist Church
110. William Estes Home
111. Thomas Nightingale's Cowpen
112. Site of Broome's Mill
113. Thomas Woodward, the Regulator
114. Anvil Rock
115. Tocaland
116. Hunstanton
117. Dr. Daniel Jackson Sanders
118. Wylie House
119. Clowney Place
120. Winnsboro, County Seat

The loss of some open land resources may not be anything to be alarmed over, but the steady erosion of such land will jeopardize the county's legacy to future generations.

ISSUE: RECREATION

OBJECTIVE: TO PROVIDE A COMPREHENSIVE AND BALANCED SYSTEM OF PARKS AND RECREATION FACILITIES

RESPONSE:

Recreation facilities seldom influence development, but they do complement it. They are essential to a balanced social environment. And with growth will come demand for more parks and recreational facilities, although support for more parks appears to be only luke warm according to the citizen in-put forums.

Recreational facilities in Fairfield County are provided by federal, state, county, city and private sponsors.

The federal government owns and manages approximately 11,560 acres in the Sumter National Forest, located in the northwest corner of the county. This facility provides hiking, riding and wilderness experiences, concentrating on recreational activities that require a lot of land.

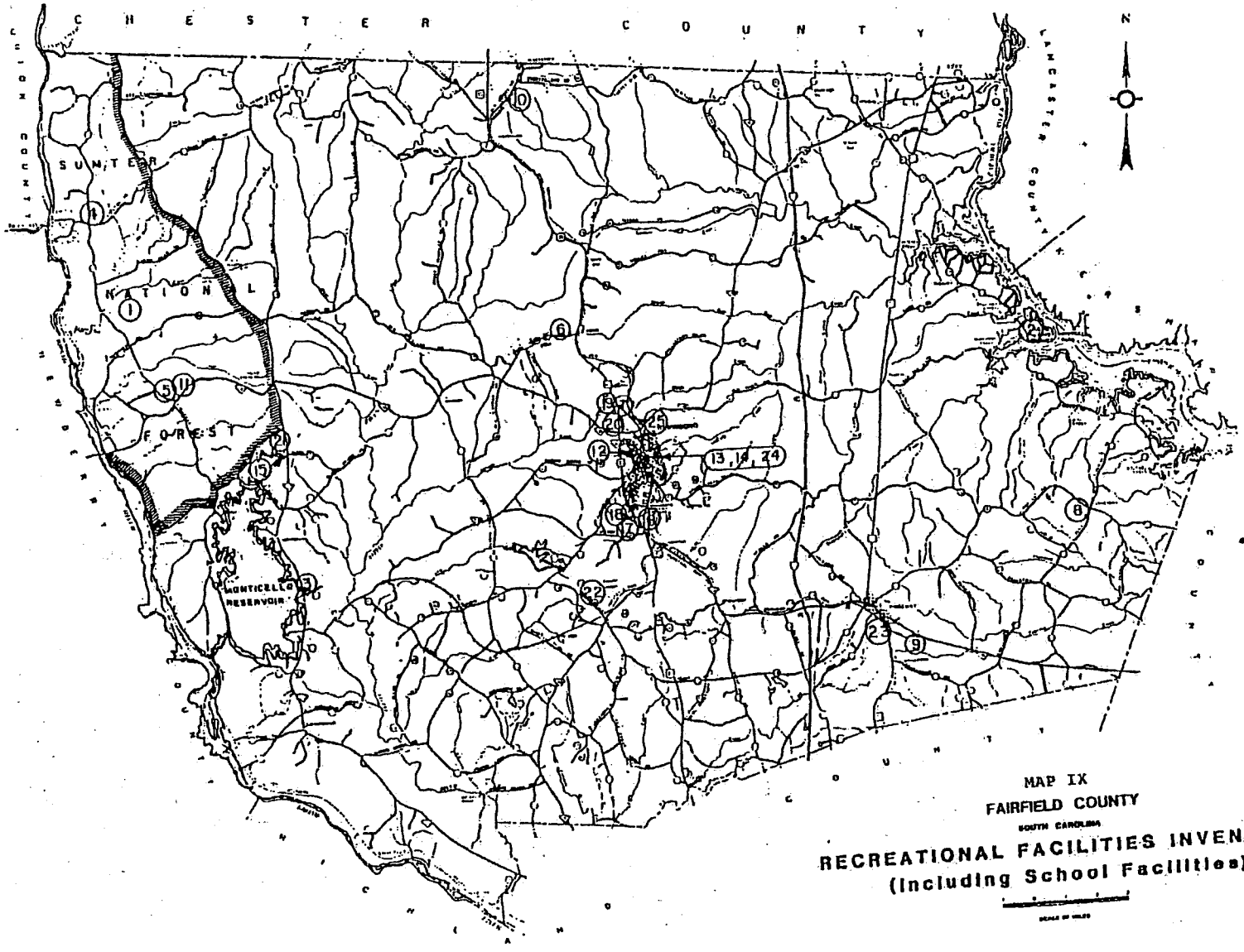
The state owns and operates a large facility on Lake Wateree (Lake Wateree State Park). It includes a multitude of open space and water-oriented activities and facilities.

The Town of Winnsboro has a comprehensive recreation program, with two in-town parks, one of which (Fortunes) contains a swimming pool.

The Fairfield County Recreation Commission manages nine parks countywide, with a tenth being developed at this time. The location and assets at each are listed and shown by the following table and map.

Additionally, there is in the county a Recreation Association, with athletic facilities south of Winnsboro. Also, SCANA provides water-oriented recreation activities at its "Recreation Lake," north of Meadowlake Road, and fishing and boating on the Reservoir Lake.

Finally, the School Board makes it many facilities available for public use through the Fairfield County Recreation Commission.



MAP IX
FAIRFIELD COUNTY
SOUTH CAROLINA
RECREATIONAL FACILITIES INVENTORY
(Including School Facilities)

SECTION VI

COMPREHENSIVE DEVELOPMENT PLAN, 2010

In reviewing the various factors affecting development, i.e. projected growth, existing land use, economic conditions, development trends, and the other elements responsible for development, a skeletal framework begins to take shape. Forces already at work have provided us with a foundation. This Plan is designed to build on that foundation---not alter what has been done or start anew, but guide future development in a manner that will complement and enhance social and economic conditions in the county, and lend order to the development process.

But the trends in process point to impending conflict. Areas of the county with the greatest development potential---in the southeast corner---contain most of the county's prime farmlands and mineral deposits. They are also in the line of expanding industrial and residential development north of Columbia, principally along I-77. By nature, these uses are inherently incompatible, setting the stage for conflict.

The potential for conflict is further compounded by neighboring Richland County's Comprehensive Plan for the I-77 corridor, which designates much of the contiguous area in Richland County for "development", meaning any number of uses under certain conditions. The logic in this approach is to maximize flexibility in meeting future development proposals "as the area has no particular development trend, but has potential for various uses."

East of SR 227 (Hood Road in Fairfield County), the Richland County Plan recommends low-density residential development. Assuming a continuation of "like development" into Fairfield County, east of Hood Road, similar low-density residential development may be expected. Development patterns along the I-77 corridor into Fairfield County will be shaped entirely by economics, on a first come basis, according to the Richland County Plan.

These "planned" scenarios mirror current development trends based principally on economics and locational preference. But they do little to remedy the potential for conflict in Fairfield County or insert order into the development process.

LAND USE PLAN ELEMENT

The Land Use Plan Element of the Comprehensive Plan is designed to do both---bring order and compatibility to the development process---establishing goals and objectives for the various areas of the county. Based in part on factors influencing development, projected needs and potential, goals and objectives are embodied in the following generalized Land Use Classifications, which are portrayed by the use of symbols on the accompanying Comprehensive Development Plan Map.

Land Use Map Symbol	Generalized Land Use Area Classification
GD	General Development
●	Commercial Clusters, within 500'
RC-D	Residential Conservation and Development
IND	Industrial Development
RR	Rural Development-Resource Preservation

GD, General Development

Areas so designated are projected to accommodate most of the future growth and development in the county. As a result, multiple uses (residential, commercial and industrial) are expected in these areas, tempered principally by market conditions. Here "highest and best use" options are advocated by the Plan. But with general, open-ended development options, there is inherent potential for land use conflicts mentioned previously. To prevent this, the Plan recommends the adoption of development standards for these areas:

(1) to ensure that adequate buffers, screens, and setbacks will be provided between potentially incompatible uses;

(2) to address storm drainage and sedimentation problems created by new development;

(3) to regulate outdoor advertising and help prevent visual blight and obstruction to travel;

Objective

The objective of this land use designation is to meet in orderly concentrations the need for commercial development in areas dominated by residential and/or rural uses, and to discourage strip commercial development.

RC-D, Residential Conservation and Development

Without some type of land use regulations or development standards, it is difficult to maintain quality subdivisions and protect existing residential areas.

Even deed restricted subdivisions are vulnerable to incompatible development from all sides, as peripheral lots are exposed to and unprotected from neighboring development, whatever the use.

Residential security is of prime concern in any community. But all residential areas in unincorporated Fairfield County lie unprotected. Many already have been compromised as a result, by mixed, incompatible land uses.

Still, all is not lost. There remains homogeneous quality subdivisions within the county, as well as a number of nearby sites with residential potential. However, both need and warrant "protective zoning". Without it, they are vulnerable to an intrusion of mixed and potentially incompatible land uses.

Objective

Areas designated RC-D on the accompanying Plan Map are designed to protect existing residential uses and nearby areas with residential potential, exclusively for residential purposes, and to restrict or prohibit any use of land which would compromise or otherwise infringe on the prevailing character of established and planned residential areas.

IND, Industrial Development

Specific sites within the designated IND on the Plan Map have been investigated and found to have industrial potential. Most are relatively level, facilitated by or planned for water and sewer, and easily accessible. Many have rail.

Such conditions uniquely qualify these areas for most industrial uses, prompting their reservation principally for future industrial development. The availability of suitable industrial sites is fundamental to industrial development. Where good sites exist, they should be retained, principally if not exclusively for industrial development.

TABLE XXIX

SUMMARY LAND USE PLAN LEGEND

Use Classification	Recommended Density (No. Residential Units Per Acre)	Principal Use(s) Recommended
General Development (GD)	(12) per acre with water and sewer (2) per acre with water, but not sewer (1) per acre without water or sewer	Commercial, business, light industrial, multi-family, motels, commercial recreation, residential, institutional and mobile home parks.
Residential Conservation and Development (RC-D)	(4) units per acre	Single and multi-family residential uses, townhouses, condominiums, patio homes, triplexes, duplexes, and individual mobile homes, but not mobile home parks.
Industrial Development (IND)	(1) unit per 10 acres	Industrial, warehousing, distribution, wholesaling, storage, research and testing facilities and plants.
Rural Development-Resource Conservation (RR)	Not less than (1) per acre	Agricultural and support uses, single-family dwellings, mobile homes and small scale convenience and service commercial uses, hunting and fishing lodges, open air recreation, marinas, and agri-industrial uses.

Proposed Fire Protection Projects

Comprehensive recommendations for improving and expanding fire protection in the county are contained in the county's Fire Protection Master Plan, 1990. Suffice it to say, the key project elements of the Plan call for constructing four new stations, one of which is now underway (Map VII). Cost estimates and priorities are contained in the Plan, as well as other project details designed to improve fire protection throughout Fairfield County.

DEVELOPMENT POLICIES

In addition to the above, the following development policies are hereby established. They form the basis for the planning process by providing a means to evaluate land use proposals for compliance with overall community goals.

(1) General Policies

(a) Encourage planned and orderly growth consistent with the county's Land Use Plan, the capability of the natural resource base and the county's ability to extend or provide the necessary supporting public services and facilities to accommodate development.

(b) Provide for the conservation and protection of natural and historic resources through the proper use and management of land, water, soil, forest and mineral deposits.

(c) Assure that appropriated public funds provide needed public services and facilities in the most cost-effective manner.

(2) Residential Policies

(a) Provide opportunities for an appropriate mix of dwelling types, sites and prices in order to meet the current and projected housing needs of county residents in accordance with their financial capabilities and preferences.

(b) Encourage new housing development to strive toward the best principles of site planning and residential design through the enforcement of the county's subdivision regulations and building codes.

adjacent land uses.

(b) Encourage the clustering of commercial shopping facilities in nodes which are convenient to population concentrations.

(c) Discourage the spread of strip-type commercial development.

(d) Prohibit the encroachment of incompatible commercial development into established residential areas.

(e) Promote the adaptive reuse of existing structures when appropriately located for commercial use.

(f) Coordinate the growth of commercial development with information regarding the potential impact on community facilities, utilities, transportation, adjacent and nearby land uses and effects on the environment.

(4) Industrial Policies

(a) Encourage industrial growth that provides quality employment opportunities and makes effective use of the county's resources.

(b) Encourage the development of industrial uses in areas which will maximize the potential for safe, efficient and compatible operations while minimizing excessive infrastructure improvements and service costs to both industry and government.

(c) Seek to establish and maintain a balanced relationship between industrial, commercial and residential growth to ensure a stable and healthy tax base.

(d) Pursue the development of planned industrial districts and discourage the location of industrial uses in rural or natural resource areas.

(e) Encourage the development and/or expansion of industrial uses which do not produce excessive noise, smoke, dust or other particulate matter, vibration, toxic or noxious waste materials, odors, fire and explosive hazards or other detrimental impacts.

(f) Promote the location of industrial uses in areas which have compatible soils, drainage and other

(b) Ensure adequate rights-of-way for future road improvements and expansions. Right-of-way dedication requirements and building setback lines will be maintained for a heirarchical system of roads based on anticipated level and nature of future use.

(c) Protect the safety and traffic-carrying capacity of interchange areas and major thoroughfares from adverse adjacent land development by minimizing curb cuts along such corridors.

(d) Ensure the provision of safe and adequate parking facilities suitable to each type of development, and establish requirements that vehicular circulation within new development areas function efficiently and safely.

(e) Enact legislation to protect the county's airport.

(7) Open Space and Recreation Policies

(a) Ensure the availability and accessibility of a variety of active and passive recreational opportunities for all persons in the county, including the physically, socially and economically handicapped.

(b) Secure adequate future sites for recreation activities by identifying land and water areas having the best combinations of natural features, size and location suited for the type of experience to be provided. These sites should be acquired by the county or some other public entity and dedicated to recreation development and use.

(c) Preserve the overall positive qualities of the natural environment which give the county its character, and preserve those areas which have important recreational, scenic, historic, archeological, educational and aesthetic values.

(d) Encourage land development practices that reserve open space within or close to developed sites. Such open space should preserve the land's natural features and provide opportunities for the development of active recreation facilities.

SECTION VII

PLAN IMPLEMENTATION

Moving from the drawing board to reality is seldom an easy task in any endeavor. It is particularly difficult where the proper tools for implementation are not in place. Such is the case in Fairfield County.

But what can be done to reach the goals and objectives of this Plan? To start with, the county can begin a media blitz to secure public backing, then move to enact the necessary legislation for implementation.

Chronologically, the recommended process is as follows:

(1) Air the plan at public meetings and through the media.

(2) Adopt the plan as an official guide to future development.

(3) Maintain the plan.

(4) Coordinate the plan with the plans of other agencies operating in the county.

(5) Enact development and land use regulations to assure plan compliance and implementation.

AIR THE PLAN

Public awareness and participation in the land planning process are essential to its acceptance and use as a guide to development. Developers, realtors, property owners, agencies, and the general public alike are responsible for many individual decisions influencing future development. Consequently, they should have a hand in the making and execution of it. With public participation and support, implementation may be assured. Clearly, it is essential. It can promote public understanding of the planning process and expose proposed plans and policies to a broad spectrum of interest, whose reaction may make significant improvements in original proposals.

There are several ways in which to secure citizen involvement and support. It may be accomplished through public hearings, announcements, citizen advisory meetings, selected contacts with community leaders, etc. Also, the dissemination of copies of the Plan to interested groups and conducting informal

government, the Recreation Commission, Fairfield United Action, the Recreation Association, the School Board and other county agencies can spell the difference between success and failure. Interaction with these agencies will help to ensure full cooperation in the implementation of the Plan, and improve the efficiency of the development process.

ENACT DEVELOPMENT AND LAND USE REGULATIONS TO ASSURE PLAN COMPLIANCE AND IMPLEMENTATION

Currently the county has a number of codes and ordinances designed to impact the development process and improve the outcome, including:

(1) A Mobile Home Park Ordinance
(2) A Subdivision Ordinance
(3) A Flood Damage Prevention Ordinance
(4) A Building Code
(5) An Electrical Code

Still, these regulations are insufficient to implement many of the goals and objectives outlined by this Plan. More is needed in the way of (1) development regulations and/or (2) land use restrictions. Without such regulations, implementation of this Plan will be limited. This is a Plan, nothing more; it neither requires nor mandates any action on the part of anyone. And until such time as requirements are imposed, the development process will remain unaltered.

But what type of regulations should the county adopt? There are several alternatives it may consider.

First, there is zoning. A Zoning Ordinance can regulate and control the use and development of land in accord with this Plan. But zoning, per se, is seldom a popular issue, particularly in the more rural areas such as Fairfield County.

A second alternative is a concept referred to generally as "performance zoning" or "development standards". It may embrace regulations and concepts found in zoning and subdivision ordinances, and more. These regulations are becoming increasingly popular in counties where attitudes are hardened toward zoning. They differ from conventional land use (zoning) regulations by concentrating on how to achieve good development rather than segregating development on the basis of use. The type of use proposed for development is seldom regulated. The emphasis is on development standards, thus minimizing negative by-products and enhancing sound development practices. Conventional (zoning) regulations generally reverse this concept, concentrating on the regulation of use rather than the multi-faceted impact of development.

districts, with the primary focus on development and performance standards.

Such an ordinance, properly drafted, could give the county sufficient flexibility to accommodate projected growth, while providing safeguards against development that might compromise existing resources or land uses.

Under this arrangement, regulations will vary from one area classification to another, depending on the development objectives of each. But such regulations would not relate to or control the use of land except in designated Use Zones, where land use regulations are needed and recommended to achieve stated plan objectives.

CONCLUSION

This document is to be used as a reference and guide to the future development of Fairfield County. It speaks to specific as well as general issues and concerns identified by the research and planning. The Plan represents an attempt to better infuse long-range planning into the day-to-day decisions affecting development.

The Plan should not be viewed as a static or rigid document, but as an elastic guide to development, accommodating change within its broader confines. As such, it should be reviewed regularly for accountabililty, as required by the state codes. In this way, it will remain an effective and current blueprint for development.

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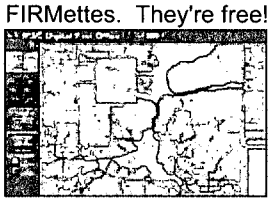

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KEY TO MAP

500-Year Flood Boundary
100-Year Flood Boundary
Zone Designations*
100-Year Flood Boundary
500-Year Flood Boundary

SPECIAL FLOOD HAZARD AREA — ZONE A

Base Flood Elevation Line With Elevation In Feet** — 513

Base Flood Elevation In Feet Where Uniform Within Zone** — (EL 987)

Elevation Reference Mark — RM7x

Zone D Boundary

River Mile — •M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
NOVEMBER 25, 1977

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 19, 1982

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE
2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

FAIRFIELD COUNTY, SOUTH CAROLINA
(UNINCORPORATED AREAS)

PANEL 175 OF 250

COMMUNITY-PANEL NUMBER
450075 0175 B

EFFECTIVE DATE:
JULY 19, 1982

Sec. 2.3 Ref 11

United States Department of Energy

Savannah River Site

Groundwater Transport Modeling for Southern TCE and Tritium Plumes in the C-Area Groundwater Operable Unit (U)

Tamara L. Fogle and Kevin E. Brewer

WSRC–TR–2001-00206

Revision 0

June 2001

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and
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EXECUTIVE SUMMARY

This report documents the development and application of a local groundwater flow and transport model for the C-Area Reactor Groundwater Operable Unit (Figure ES-1). The work is a continuation of the recently completed regional groundwater flow model for C Area (Bills et al. 2000). The local flow and transport model is a representation of groundwater flow and contaminant migration through the Upper Three Runs aquifer, southwest to Fourmile Branch and Castor Creek (Figure ES-2). The model domain encompasses an area that includes the southern trichloroethylene plume and the southern tritium plume.

The objectives of this groundwater modeling analysis were to provide fate and transport modeling of the southern trichloroethylene plume to assess the need for an early action for that plume, and to provide information to support evaluation of various remedial alternatives for the southern trichloroethylene plume.

The southern trichloroethylene plume originates from just beneath the C-Reactor building (105-C) and flows to the southwest, passes below the C-Reactor Seepage Basin, and eventually discharges to Castor Creek. The e plume is in the Upper Three Runs aquifer, has a current maximum detected concentrations of about 9.6 mg/L, and is intermingled with the southern tritium plume.

The southern tritium plume is associated with: the C-Reactor Seepage Basin and other upgradient undetermined sources behind the C-Reactor fence. The plume branches into two lobes, flowing west and southwest, before discharging into Fourmile Branch and Castor Creek, respectively.

The seven-layer regional flow model was converted to the local flow model by subdividing two aquifer layers (the upper aquifer zone and the lower aquifer zone) to best model vertical contaminant migration. The new layers retained the hydrostratigraphic properties of the original layer from which they were split. The resulting local flow model was checked against the

regional model to ensure that splitting the layers did not change the flow characteristics inherited from the regional model.

The computer code used in this modeling effort was the Groundwater Modeling System version 3.0, with associated flow, particle tracking, and contaminant transport programs of MODFLOW, MODPATH, and MT3DMS. These industry standard programs are commonly used for solving groundwater flow and transport problems. MODFLOW was used in the development of the regional flow model. MODPATH was used to assist with the calibration of the regional flow model and the estimation of contaminant travel times. MT3DMS is a 3D transport model for the simulation of advection, dispersion, and chemical reactions of contaminants in groundwater.

For this modeling effort, two "bounding" source-term scenarios were used to bracket the potential future extent of trichloroethylene contamination. Scenario A assumed that there is no additional trichloroethylene loading to the groundwater and the trichloroethylene concentrations in the current plume configuration are the only initial trichloroethylene loading to the groundwater system. This scenario represents an optimistic, low-mass bounding scenario.

Scenario B assumed that there is constant trichloroethylene loading to the groundwater at the C-Reactor building, approximately maintaining the upper portions of the current plume. Along with this constant source, the current trichloroethylene plume configuration is used as an initial contaminant distribution. The constant contaminant loading continues indefinitely. Scenario B represents a conservative, high-mass bounding scenario.

Two remedial technologies for trichloroethylene were presented as remedial alternatives: recirculation wells and phytoremediation. The recirculation well technology was designed to extract contaminated groundwater from a lower screen interval and re-inject the remediated water at an upper screen interval. The lower and upper screen intervals of the recirculation wells were positioned in the water table aquifer zone. Based on Project Team guidance, the in-well contaminant removal efficiency was assumed to be approximately 95%.

The phytoremediation system was designed to extract contaminated groundwater and release the water to surface vegetation through irrigation (sprinkler/drip/etc) systems. Based on Project

Team guidance for this modeling effort, it was assumed that no fluid pumped from the extraction wells would return to the groundwater system (i.e., 100% evaporation/plant uptake). Therefore, the location and operation of the surface systems were not simulated because they have no effect on the groundwater results.

For each remedial alternative, the associated wells were located in three general areas (Figure ES-1): the reactor fence, the plume center, and the distal edge. Various combinations of these three areas were also simulated. The wells were located in the upper, middle, and/or the lower aquifer zone as appropriate to intercept trichloroethylene contaminated groundwater. No optimization of the remedial systems was made with respect to tritium. Actual siting of wells in the field should be based on additional field characterization data to ensure appropriate locations and screen intervals to capture actual contamination.

"Reactor fence" refers to a series of locations parallel to the reactor fence. This remedial focus area is meant to represent effective and efficient source control. "Plume center" refers to locations immediately downgradient of the high concentration zones of the portion of the plume outside (downgradient of) the reactor fence, approximately halfway between the fence and Castor Creek. "Distal edge" refers to locations near the leading edge of the plume yet far enough upgradient from groundwater discharge locations to capture as much of the plume as possible prior to discharge.

The resulting transport model was calibrated to the general features of the currently known southern trichloroethylene plume, and a reasonably constant source term was developed. The transport model was determined to be most sensitive to source-term concentrations and hydrodynamic dispersivity values. The model was least sensitive to changes in sorption coefficients. Ten remedial alternatives derived from two remedial technologies (recirculation wells and phytoremediation) were evaluated and compared by examination of concentrations, fluxes, and masses.

The basecase modeling (no remedial action) showed that trichloroethylene flux to Castor Creek will continue to increase for the next 10 to 20 years, then diminish at a rate dependent on the

source configuration (i.e., depleted or continuous). Likewise, concentrations at the distal edge will increase above maximum concentration levels within 5 to 15 years. These modeling results therefore imply that the current trichloroethylene plume is not at "steady-state" but continues to evolve and enlarge, with resulting increases of distal edge concentrations and stream fluxes. Not surprisingly, the best alternatives for immediate impact to distal edge concentrations and Castor Creek flux are those located at the distal edge.

The alternatives with greatest impact on total plume TCE mass and tritium activity, and with the largest and more rapid reductions in stream flux appear to be the remedial alternatives with implementations at more than one focus area (i.e. reactor fence, plume center, and distal edge). With the alternatives, significant long-term concentration reductions and flux reductions are predicted, and reasonably short-term (10-year time frame) impacts are indicated. The remedial alternative with just phytoremediation wells at the distal edge showed beneficial impacts almost as great as the multi-area remedial alternatives.

In general, the phytoremediation alternatives performed better than the recirculation well alternatives. This is likely due to the given assumption that the pumped fluid from the phytoremediation wells will not impact C-Area groundwater. Additional scenario runs evaluating the potential impact on the groundwater plume from increased infiltration may be warranted.

Uncertainty is inherent in any modeling process, and the uncertainties associated with this modeling task have been managed by using conservative assumptions, obtaining a good calibration, and analyzing the sensitivity of the model predictions. The results of this modeling should be only considered as generally representative of the groundwater flow and transport system near the C-Reactor area and should not be used to support small-scale predictions of flow (or transport). Because of the conservative assumptions, the flow and transport model can be used to compare remedial alternatives and to predict general flow directions and travel times.

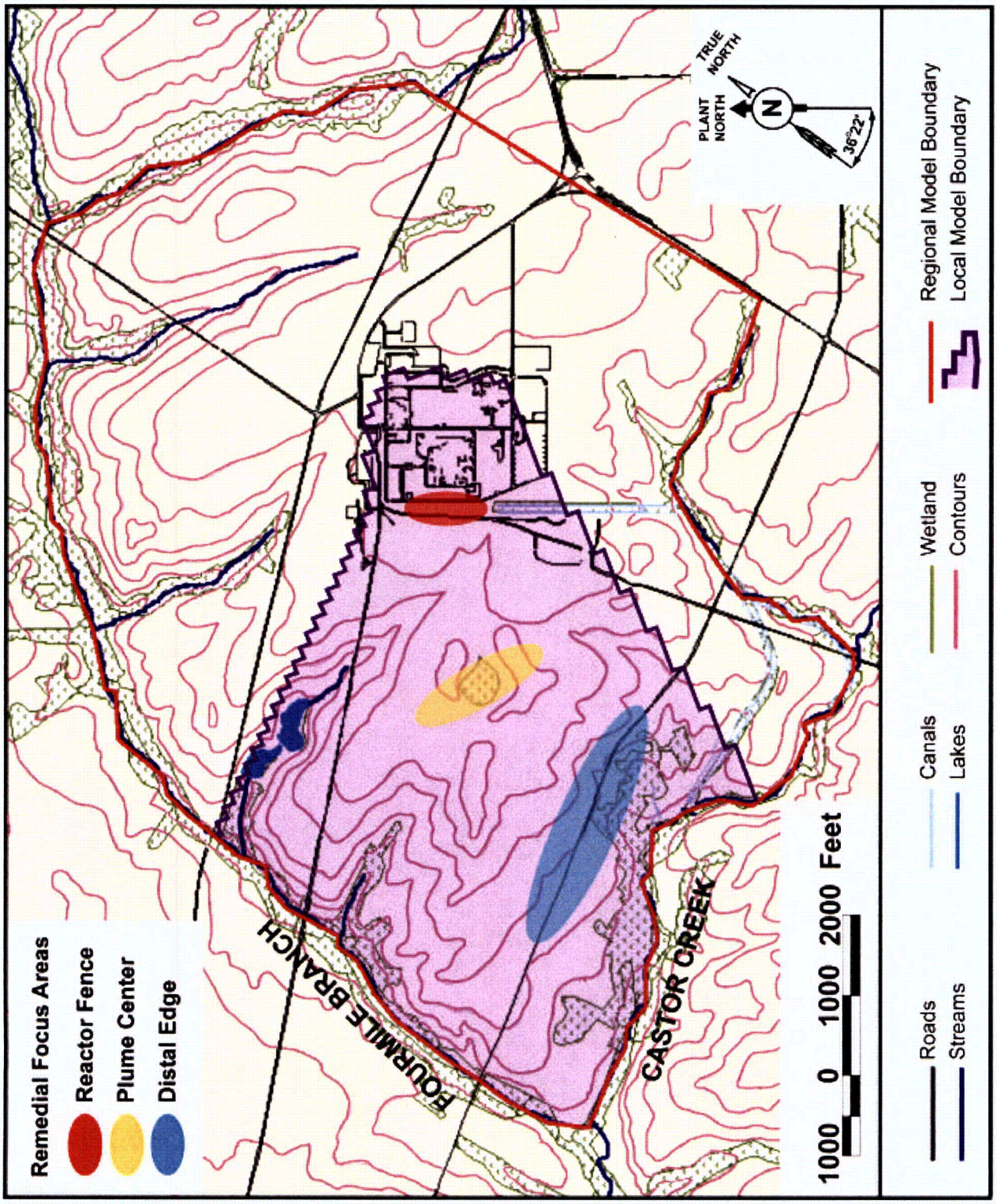

Figure ES-1. Map View of Model Domain

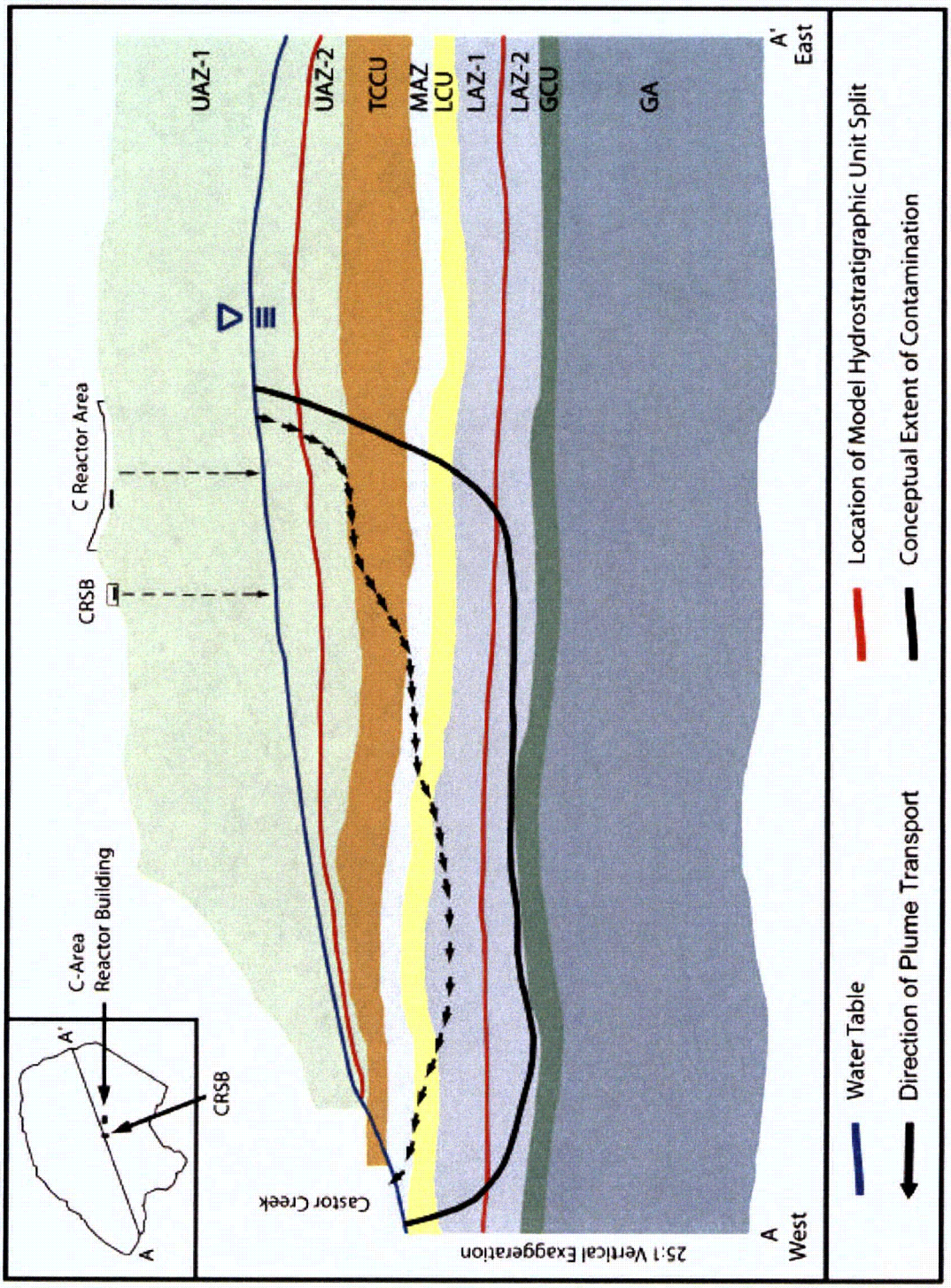

Figure ES-2. Hydrogeologic Conceptual Model: Upper Aquifer Zone (UAZ), Tan Clay Confining Unit (TCCU), Middle Aquifer Zone (MAZ), Lower Confining Unit (LCU), Lower Aquifer Zone (LAZ), Gordon Confining Unit (GCU), and Gordon Aquifer (GA)

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LIST OF ACRONYMS AND ABBREVIATIONS

2D	two-dimensional
3D	three-dimensional
Ci	Curie
Ci/yr	Curies per year
CPT	cone penetrometer technology
CRGW	C-Area Reactor Groundwater
CRSB	C-Reactor Seepage Basin
FACT	Flow and Contaminant Transport (Code)
ft/d	feet per day
FS	fine-scale
GA	Gordon aquifer
GCU	Gordon confining unit
GIMS	Geochemical Information Management System
GMS	Groundwater Modeling System
gpm	gallons per minute
HCM	hydrogeologic conceptual model
Kd	sorption coefficient
kg	kilogram
kg/yr	kilograms per year
LAZ	lower aquifer zone
LCU	lower confining unit
LS	large-scale
m	meter
MAZ	middle aquifer zone
MCL	maximum contaminant level
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
mg/L	milligrams per liter
MODFLOW	Modular Three-Dimensional Finite-Difference Groundwater Flow Model (Code)
MODPATH	a particle tracking post-processing package for MODFLOW (Code)
MT3DMS	transport modeling code
OU	Operable Unit
pCi/mL	picoCuries per milliliter
QAP	Quality Assurance Plan
RACM	Remedial Alternative Conceptual Model
RCRA	Resource Conservation and Recovery Act
RCU	Relative Concentration units
RFI/RI/BRA	RCRA Facility Investigation/Remedial Investigation/Baseline Risk Assessment
SRS	Savannah River Site
TCE	trichloroethylene

TCCU	tan clay confining unit
UAZ	upper aquifer zone
USDOD	United States Department of Defense
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
UTRA	Upper Three Runs aquifer
WSRC	Westinghouse Savannah River Company, LLC

1.0 INTRODUCTION

This report documents the development and application of a local groundwater flow and transport model for the C-Area Reactor Groundwater (CRGW) Operable Unit (OU). The model is a continuation of the recently completed regional groundwater flow model for C Area (Bills et al. 2000) (Figures 1-1 and 1-2). The local flow and transport model is a representation of groundwater flow and contaminant migration through the Upper Three Runs aquifer (UTRA), southwest to Fourmile Branch and Castor Creek. The model domain (Figure 1-3) encompasses an area that includes the intermingled southern trichloroethylene (TCE) and southern tritium plumes.

The southern TCE plume originates from just beneath the C-Reactor building (105-C) and flows to the southwest, passes below C-Reactor Seepage Basin (CRSB), and eventually discharges to Castor Creek (Figure 1-4). The TCE plume covers approximately 51 acres and is significantly less extensive than the intermingled tritium plume. The TCE plume is in the UTRA and current maximum detected concentration is about 9.6 mg/L. (The maximum contaminant limit (MCL) is 5μg/L.)

The portions of the plume located beneath CRSB and downgradient were characterized during the CRSB groundwater characterization (1997 to 1998). Portions of the plume located behind the reactor fence were characterized during the 2000 field effort under the CRGW project.

The southern tritium plume (Figure 1-5) is associated with the CRSB and other upgradient, undetermined sources in the C-Reactor Area behind the fence. This plume covers an area of approximately 800 acres. It is located in the UTRA and is approximately 80 feet thick at the deepest portion. The plume branches into two lobes, flowing west and southwest, before discharging into Fourmile Branch and Castor Creek, respectively. Tritium has been detected in the surface water of both creeks. The maximum detected tritium concentration in the plume downgradient of CRSB is 57,000 pCi/mL. (The MCL is 20 pCi/mL.) Upgradient of CRSB, by

the C-Reactor fence line, concentrations of 40,000 pCi/mL have been detected. This portion of the plume is also in the water table aquifer.

Both the southern TCE plume and the southern tritium plume are administratively associated with the CRGW OU. A summary of the process history and unit description for C-Area facilities is given in the previous modeling documentation (Bills et al. 2000).

To assist in the investigation of the C-Area groundwater contaminant plumes, an updated C-Area groundwater flow model was recently developed using the Groundwater Modeling System (GMS) (Bills et al. 2000). This modeling effort is a continuation of the recently completed regional groundwater flow model, which forms the basis for local flow and transport modeling. Where applicable, details of the regional flow model will be provided throughout this document.

1.1 Modeling Objectives

The following objectives have been developed for this groundwater modeling analysis (WSRC 2000a):

- Provide fate and transport modeling of the southern TCE plume to assess the need for an early action for that plume,
- Provide information to support evaluation of various remedial alternatives for the southern TCE plume.

1.2 Summary of Approach

The regional model was developed using relatively well-defined boundary conditions and calibrated to numerous groundwater monitoring data values. The regional model was then used to create a "cutout", "zoom-in", or local flow model that focused on the areas immediately surrounding the southern TCE and tritium plumes (Figure 1-3).

The transport model was roughly calibrated to the limited set of historical and recent contaminant data by adjustment of various transport parameters. Only limited changes to the flow model were allowed. The model was then used to simulate a number of remedial alternative scenarios, incorporating a number of observation points.

For the recirculation well remedial alternative scenarios, local model parameters were determined from a separate, detailed flow and transport model of a representative "idealized" single-well recirculation well system.

1.3 Sources of Information

The following sources were used to assess site hydrogeologic conditions, determine model calibration targets, and specify reasonable ranges for transport modeling parameters:

- *Groundwater Flow Modeling for C-Area Groundwater Operable Unit (U)*, WSRC-RP-2000-4096, (Bills et al. 2000)

- *Hydrogeological Analysis and Groundwater Flow for C-Reactor Area with Contaminant Transport for C-Reactor Seepage Basins (CRSB) and C-Area Burning/Rubble Pit (CBRP)(U), WSRC-TR-99-00248* (Flach et al. 1999b)

- *Regional Groundwater Flow Model for C-, K-, L-, and P-Reactor Areas, Savannah River Site, Aiken, South Carolina (U)* (Flach et al. 1999a)

- *RFI/RI Work Plan for the C-Area Reactor Groundwater Operable Unit (U),* WSRC-RP-2000-4088 (WSRC 2000b)

- Historical water level elevations and chemical concentrations in groundwater – the Savannah River Site (SRS) Geochemical Information Management System (GIMS) Database

- Details of well construction, geologic conditions encountered, water level measurements, and slug test results for regional observation wells (in the vicinity of the five reactor areas) – *Technical Oversight to Install Reactor Piezometers* (WSRC 1999b)

- Monitoring well construction information (particularly screen zone intervals) – from the *Environmental Protection Department Well Inventory List* (WSRC 1999a)

2.0 CONCEPTUAL MODEL

This section documents the development of the hydrogeologic conceptual model (HCM), the contaminant plume configurations, and the remedial alternative conceptual models (RACMs). The section also addresses assumptions associated with each of the model components.

2.1 Hydrogeologic Conceptual Model

The first step in the modeling process is formulation of the HCM, which is a representation of the groundwater flow system pertaining to the field problem. The HCM incorporates a description of the geologic setting, hydrostratigraphic units, hydraulic parameters, and system boundaries. System boundaries include external boundaries, wells, and sources/sinks. In addition, the HCM serves to organize the dimensions and grid design of the numerical model.

The HCM from the recently completed regional groundwater flow model for C Area (Bills et al. 2000) has been slightly modified for the local flow and transport model (Figure 2-1). The characteristics of the local flow and transport HCM are as follows:

- The local flow component of the model is a steady-state representation of the shallow aquifer system.

- The contaminant transport component of the model is a transient representation.

- Conceptually, the Floridan aquifer system is represented by seven hydrostratigraphic units that were identified based upon current understanding of the hydrostratigraphic conditions in C Area. In the regional flow model, each hydrostratigraphic unit corresponds to a model layer. In the local flow and transport model, two of these hydrostratigraphic units have been split to more accurately simulate vertical contaminant migration. Therefore, the upper seven model layers are used to represent the five hydrostratigraphic units of the UTRA, the eighth layer represents the Gordon confining unit (GCU), and the ninth layer represents the Gordon aquifer (GA) (Figure 2-1). The bottom of the GA is considered impermeable.

- In the regional flow model, heterogeneous and anisotropic conditions, based on interpreted lithofacies changes across the model domain, were modeled by assigning hydraulic conductivity values to zones in each hydrostratigraphic unit. In the local flow and transport model, the two new layers retain the hydraulic properties of the layer from which they were split.

- Boundary conditions for the local flow and transport model are the same as those conditions described in the regional flow model. However, model cells outside of the local model domain depicted in Figure 1-3 have been defined as inactive cells for the local transport modeling. Thus the C-Reactor area is on the eastern edge of the local flow and transport model domain. As in the regional flow model, the UTRA discharges to Fourmile Branch or Castor Creek and does not flow underneath.

The local flow and transport model domain falls within the C-Reactor area regional flow model and descriptions of the geologic setting and hydrostratigraphy are detailed in the regional flow documentation (Bills et al. 2000).

2.2 Contaminant Plume Configurations

Figures 1-4 and 1-5 are aerial depictions of the TCE and tritium plumes based on highest concentration cone penetrometer technology (CPT) data, regardless of depth. Although these

figures are valuable for illustrating the lateral extent of contamination, a three-dimensional (3D) understanding of the contaminant distribution is required to conduct local flow and transport modeling. To obtain a 3D-contaminant distribution, TCE and tritium plume maps were created for each contaminated model layer based on current CPT data. The process outlined below was used to develop both the TCE and tritium plume maps.

- A 3D-scatter file of the CPT data was imported to GMS (see Figures 2-2 and 2-3).
- Each data point was located within the model, and its location and concentration were plotted on "maps" by layer.
- The data for each model layer were carefully examined and hand-contoured, resulting in a plume map for each model layer.
- The contours from each plume map were digitized and converted to two dimensional (2D) scatter files with each data point having an assigned concentration.
- These new 2D scatter files, one for each contaminated model layer, were imported to GMS.
- The 2D scatter files were compared to the layer plots of the CPT data, and some additional scatter points were added to the files to improve subsequent interpolation.
- The 2D-scatter file for each layer was interpolated to a 2D grid with the same dimensions and orientation as the 3D-model grid from the local flow and transport model.
- The interpolated 2D grid concentrations were imported to the 3D local flow and transport grid by layer.

When the 2D grid concentrations are applied to the 3D grid, the TCE and tritium plumes can be examined layer by layer. The TCE plume can be examined in Figures 2-4 through 2-10 for

model layers 1 through 7, respectively. The tritium plume can be examined in Figures 2-11 through 2-17 for model layers 1 through 7, respectively. The concentrations assigned to the 3D grid serve as the starting concentrations for the local flow and transport model. Each model layer contains a representation of the current TCE and tritium plume at that depth. The plumes for TCE and tritium do not exist in model layer 8 or 9.

For this modeling effort, two "bounding" source-term scenarios, Scenario A and Scenario B, are used to bracket the potential future extent of TCE contamination. Scenario A uses the current TCE plume configuration as the exclusive initial TCE source in each of the 7 layers. Scenario B uses the current TCE plume configuration in addition to a constant TCE source. Both source-term scenarios consider only the southern plumes defined from the vicinity of the C-Reactor building to groundwater discharge locations (namely Castor Creek and Fourmile Branch) as described previously. No plume movement is assumed between the characterization time frame for the plume definition and the future remedial system installation (i.e., beginning of remedial scenario).

Scenario A assumes that there is no additional TCE loading to the groundwater and the TCE concentrations in the current plume configuration are the only initial TCE loading to the groundwater system. This scenario represents an optimistic, low-mass bounding scenario.

Scenario B assumes that, in addition to the current plume configuration, there is a constant TCE source loading to the groundwater near the C-Reactor building. This constant source loading could (approximately) maintain the upper portions of the current plume. The constant contaminant loading continues indefinitely. Scenario B represents a conservative, high-mass, bounding scenario.

2.3 Remedial Alternative Conceptual Models

After the HCM and contaminant plume configurations have been established, RACMs can be formulated. An RACM is a conceptual representation of a remedial solution to direct how the local flow and transport model will be built and analyzed. The RACM links field details and

modeling objectives to model development and incorporates the HCM, field data, contaminant plume configurations, and modeling assumptions. The RACM is an important communication tool between the model developer and the project staff or regulators. It determines what questions the model will be able to answer and how those answers will be developed. RACMs are used to determine well locations and pumping rates (if applicable), the representation of remedial systems (if applicable), placement of observation points, and simulation run time and to define contaminant source terms in the development of the local flow and transport model. The general assumptions for the RACMs developed in this modeling effort are as follows:

- The TCE plume will be simulated according to Scenarios A and B as discussed above (see section 2.2).

- The current tritium plume will be included as an initial condition in all remedial scenario runs. The resulting tritium flux and concentrations will be reported along with the TCE flux and concentration reporting. No optimization of the remedial systems will be made with respect to tritium.

- Well locations in the remedial focus areas, including the "reactor fence," the "plume center," and the "distal edge," (Figure 2-18) will be based on model simulated flow and transport conditions. Future siting of wells in the field should be based on additional field characterization data.

    - "Reactor fence" refers to a series of locations parallel to the reactor fence. This remedial focus area represents effective and efficient source control. In model simulations, this alternative will assume near 100% effectiveness at cutting-off upstream contamination.

    - "Plume center" refers to locations immediately downgradient of the high concentration zones of the portion of the plume outside (downgradient of) the reactor fence. This remedial focus area represents focused remediation of the existing plume.

- "Distal edge" refers to locations near the leading edge of the plume, yet far enough upgradient from groundwater discharge locations, so as to capture as much of the plume as possible prior to discharge. This remedial focus area represents control of the entire plume as well as prevention of plume mass from discharging to surface waters.

- Observation points will be located downgradient of the remedial focus areas and in all of the UTRA aquifer zones: the upper aquifer zone (UAZ), middle aquifer zone (MAZ), and lower aquifer zone (LAZ). These observation point locations will be the same for all scenarios. Observation point data will be presented graphically to illustrate concentration fluctuations over time.

The above assumptions apply to all three remedial alternatives developed for this modeling effort: 1) no remedial action, 2) recirculation wells, and 3) pump and phytoremediation. Together with the above assumptions, they represent the RACMs for this transport modeling analysis.

2.3.1 No Remedial Action

The first RACM for the local flow and transport model is no remedial action. This RACM is simply used to project changes in the current TCE and tritium plume configurations as time passes. In this RACM, no remedial action is implemented, and Scenarios A and B are simulated for 100 years. The RACM illustrates what happens to the TCE and tritium plumes when they are left undisturbed. This RACM is the "Basecase" and serves as a basis for comparing the effectiveness of other remedial alternatives. All of the observation points will be used to assist in determining the effectiveness of the remedial alternatives.

2.3.2 Recirculation Wells

The second RACM for the local flow and transport model is the implementation of recirculation wells. These recirculation wells are designed to extract TCE contaminated groundwater from a lower screen interval and re-inject the remediated water at an upper screen interval (Figure 2-19). The recirculation well lower and upper screen intervals are positioned in the water table aquifer

zone. The in-well contaminant removal efficiency is assumed to be approximately 95%; that is, if 100 mg/L of TCE is extracted through the lower screen zone, only 5 mg/L of TCE will be injected through the upper screen interval. The exact mechanisms of the extraction/injection in-well systems are not modeled. The simulated pumping rate for each recirculation well is assumed to be 10 gpm. Recirculation wells are situated to ensure a 25% capture zone overlap. In the simulations for this RACM, recirculation wells are located in the UAZ at the reactor fence, and/or in the UAZ at the plume center (Figure 2-18). Observation points are positioned in the UAZ downgradient of the reactor fence, in the MAZ downgradient of the plume center, and in the LAZ downgradient of the distal edge. These observation points will be used to determine the effectiveness of recirculation wells.

2.3.3 Pump and Phytoremediation

The third RACM for the local flow and transport model is the implementation of a pump and phytoremediation system. The system is designed to extract TCE-contaminated groundwater from the UTRA and release the water to surface vegetation through irrigation (sprinkler/drip/etc.) systems (Figure 2-20). This RACM assumes that none of the water pumped from the extraction wells will return to the groundwater system; that is, there will be no flow or contaminant load to the UAZ from the "phytoremediation" portion of this remedial alternative. Therefore, the location and operation of the sprinkler systems are not simulated because they do not affect the groundwater results. The simulated pumping rates for the extraction wells are based on acceptable model drawdowns and range between 5 and 10 gpm. Extraction wells are situated to ensure a 25% capture zone overlap. In the simulations for this RACM, extraction wells are located at 1) the reactor fence, 2) the plume center, 3) the distal edge, and various combinations thereof (Figure 2-18). The extraction wells are located in the UAZ, the MAZ, and the LAZ, as appropriate, to intercept TCE-contaminated groundwater. Observation points are positioned in the UAZ downgradient of the reactor fence, in the MAZ downgradient of the plume center, and in the LAZ downgradient of the distal edge and will be used to assist in determining the effectiveness of a pump and phytoremediation system.

3.0 LOCAL FLOW MODEL

3.1 Selection of the Computer Code

GMS (Groundwater Modeling System, version 3.0) was selected for the regional groundwater flow model and for the local flow and transport model. The U.S. Department of Defense (USDOD) in partnership with the U.S. Department of Energy (USDOE), the U.S. Environmental Protection Agency (USEPA), Cray Research, the Environmental Modeling Research Laboratory at Brigham Young University, and 19 other academic partners, developed this software. GMS was created for use at USDOD and USDOE sites but is used throughout the commercial groundwater modeling community as well. GMS is a graphical user environment and contains analysis codes for performing groundwater simulations. GMS has been validated following the SRS Procedure Manual E-7, Revision 30, *Conduct of Engineering and Technical Support* (WSRC 1998) and is in compliance with Quality Assurance Plan (QAP) 20-1 for software per the WSRC 1Q Quality Assurance Manual.

The GMS flow, particle-tracking, and contaminant transport programs include MODFLOW, MODPATH, and MT3DMS. These programs are commonly used throughout the groundwater modeling community for solving groundwater flow problems. MODFLOW is a modular, 3-D finite difference groundwater flow model (McDonald and Harbaugh 1988). MODPATH (Pollock 1994) is a 3-D, particle-tracking and post-processing package for MODFLOW. MODPATH uses a semi-analytical, particle-tracking scheme that allows an analytical expression of the flow path to be obtained for each finite difference grid cell. MT3DMS is a 3-D transport model for the simulation of advection, dispersion, and chemical reactions of contaminants in groundwater (Zheng and Wang 1999).

3.2 Summary of Regional Flow Model

As has been mentioned, the previous modeling effort (Bills et al. 2000) resulted in the development of regional steady-state groundwater flow model to assist in the investigation of the C-Area groundwater contaminant plumes. This regional groundwater flow model can be summarized as follows:

- The regional flow model domain extends from the C-Reactor area west/northwest to Fourmile Branch and south/southwest to Castor Creek. The model boundaries include Fourmile Branch to the north/northwest, an unnamed tributary to Fourmile Branch to the northeast, Castor Creek to the south/southwest, and a model-defined interfluvial boundary between C Area and Central Shops to the southeast.

- Vertically, the model was divided into seven layers based upon current understanding of the hydrostratigraphic conditions in C Area. The upper five layers represent the UTRA aquifer, the sixth layer represents the GCU, and the seventh layer represents the GA.

- Heterogeneous, anisotropic conditions were simulated by assigning hydraulic conductivity values to delineated lithofacies zones in each layer. Recharge was varied across the model domain by assuming no recharge in areas of groundwater discharge. Values used for each model input parameter were obtained from previous modeling in C Area, other SRS models, and SRS literature.

- The calibration goal for head residuals, 5% of the change in head across the area of interest, was met and the total model-calibrated flux was within 10% of the total measured flux. In addition, particle paths were qualitatively used to match flow paths and known contaminant plumes.

- The sensitivity analysis performed was designed to determine, quantitatively, which input parameters have the greatest effect on the model results. The regional flow model was determined to be most sensitive to changes in both recharge and hydraulic conductivity in specific layers.

- Results of the regional groundwater flow model indicate the following:

    - Groundwater from the UTRA discharges to Fourmile Branch and Castor Creek.

- The GA is essentially independent of local recharge.

- The groundwater flow velocities determined through model particle-tracking simulations agree with the process history; the first possible tritium release was in 1955.

- The model corroborates the field interpretation of a bifurcating tritium plume and further indicates that the pathway to Castor Creek is a preferred pathway, with particles reaching the discharge point in about twenty years.

- A groundwater stagnation point, where minimum head exists along a subsurface divide separating one flow system from another, is near the confluence of Fourmile Branch and Castor Creek. This stagnation point is also evident in the field data.

- All the tritium contamination is derived from either the CRSB or sources inside the reactor fence line.

- The tan clay confining unit (TCCU) together with another, deeper confining layer (the lower confining unit (LCU)) retains particle pathways in the upper aquifer zone for a longer distance.

- The MAZ is a significant, although thin, transmissive zone between the TCCU and the LCU. Particles move predominantly in a horizontal direction through the MAZ, reducing the downward flux into the LAZ.

The regional flow model development, calibration, sensitivity analysis, model limitations, and conclusions are detailed in the regional flow model documentation (Bills et al. 2000).

3.3 Local Flow Model Development

The first step in developing the local flow model was to determine if the model layers were adequate to model contaminant transport. The seven-layer regional flow model was evaluated for conversion to a local flow model to be used in a transport model. Examination of the regional flow model resulted in the conclusion that the best way to model vertical contaminant migration would be to subdivide the UAZ and the LAZ. These layers were split, and the UAZ became the UAZ-1 and the UAZ-2 while the LAZ became the LAZ-1 and the LAZ-2 (Figure 2-1). These new layers retained the hydrostratigraphic properties of the original layer from which they were split. The MODFLOW simulation was re-run to generate heads for the new layers and to ensure that splitting the layers did not change the regional flow model. A water balance was computed for this nine-layer flow model (Table 3-1). Table 3-1, which is derived from the MODFLOW output file, lists the hydraulic inputs and outputs to the model per day.

Table 3-1. Water Balance for Local Flow Model

Water IN	Water OUT
Constant Head = 1.07 x 10^5 ft^3/day (33.7%)	Constant Head = .98 x 10^5 ft^3/day (30.5%)
Drains = NA	Drains = 2.23 x 10^5 ft^3/day (69.5%)
Recharge = 2.12 x 10^5 ft^3/day (66.3%)	Recharge = 0
Total = 3.20 x 10^5 ft^3/day	Total = 3.21 x 10^5 ft^3/day

As shown by the water balance, the water entering the nine-layer model domain essentially equals the water leaving the model domain (3.2 x 10^5 ft^3/day or 2.4 x 10^6 gal/day), which is consistent with the results of the seven-layer regional flow model (Bills et al. 2000).

To simplify the process of creating the local flow model, it was decided to maintain the regional model domain for the local flow model, but to limit the local transport model domain. This was easily accomplished by inactivating specific cells in the local transport model. The process used is discussed in Section 4.0. Figures 3-1 through 3-9 show the hydraulic head contours for each model layer, limited to the active transport cells. These hydraulic head contours are consistent with the results of the seven-layer regional flow model (Bills et al. 2000).

4.0 LOCAL TRANSPORT MODEL

The local transport model was built on the local flow model and calibrated to current plume information. The first step in building the local transport model was to determine the active domain. In the regional flow model, particle-track simulations were used to help refine and calibrate the model. These particle-track simulations were also used to determine the local transport model domain. As shown in Figure 4-1, particles released at the water table in the vicinity of CRSB and the C-Reactor area travel west toward Fourmile Branch and Castor Creek. The local transport model active domain was designed to include these particle pathlines. As the figure shows, the active domain includes the C-Reactor area and extends to Fourmile Branch and Castor Creek, completely encompassing the area of anticipated contaminant migration.

4.1 Model Calibration

The local transport model was calibrated to the current plume configuration assuming a constant TCE source near the reactor building. A simulation time of 25 years was assumed. Using a trial and error method, manual calibration was performed by varying the source-term concentrations and location, and the transport parameters. The calibration process stopped when the simulated plume was visually equivalent compared to the current field plume. The comparison was focused on the aquifer layers. Figure 4-2 shows the locations of six observation points that were used to compare results of groundwater concentrations in model layers 2, 4, and 6.

4.1.1 Model Transport Parameters

The calibrated model transport parameters are summarized in Table 4-1.

Table 4-1. Calibrated Model Transport Parameters

Calibrated Transport Parameter	Value
Constant TCE Recharge Source	10.75 mg/L at grid cell [35,58,1]
Longitudinal Dispersivity	5.0
Ratio of Transverse/Longitudinal Dispersivity	0.1
Ratio of Vertical/Longitudinal Dispersivity	0.01
Porosity in Aquifer Layers	0.2
Porosity in Confining (Aquitard) Layers	0.4
Sorption Constant (TCE)	4.52E-08 ft^3/g
Bulk Density	4.19E+04 g/ft^3
Decay (tritium)	1.54E-04 day^{-1}

The model source location is relatively close to the primary field-determined source location to optimize the results of the overall plume comparison. Since the continuous source is not located at the exact source locale as indicated by field data, model concentrations should not be compared to field data in the immediate reactor area. The transport model simulates the current TCE plume configuration from the constant source in about 25 years. The longitudinal dispersivity value used is reasonable, but on the lower end of an acceptable range. The porosity values are consistent with those used in the regional flow model (Bills et al. 2000). The retardation factor is calculated according to the equation (Fetter 1994):

Retardation Factor = 1 +[(Bulk Density/Porosity)*(Sorption Constant)]

The calculated retardation factor for TCE is on the order of 1.01, which is consistent with other modeling efforts. The decay value for tritium is based on a half-life of 12.3 years.

4.1.2 Model Settings

The model settings used with the simulation runs are indicated in Table 4-2.

Table 4-2. Model Settings for Simulation Runs

Item	Value/Setting
Solution Scheme	HMOC with First Order Euler Tracking
Solver	GCG Package with MIC preconditioner
Transport Step Size	automatically calculated
Transport Simulation Step Size	365 days
Transport Simulation Timeframe	100 years (36500 days)

4.2 Basecase Scenario A Results

As described previously, Scenario A assumes that there will be no future contaminant sources to the groundwater, and the current plume configuration is the "source" for future transport and remediation. The Basecase Scenario assumes no remedial action. Figure 4-3 shows time-series effects on groundwater concentrations at select observation locations. For Basecase Scenario A, the entire TCE groundwater plume is below MCL at around a simulation time of 70 years, with most of the plume below MCL at around 30 years.

4.3 Basecase Scenario B Results

Scenario B assumes that there is a constant contaminant source to the groundwater that will exist indefinitely and that the source and current plume configuration constitute the "total source" for future transport and remediation. The Basecase Scenario assumes no remedial action. Figure 4-3 shows time-series effects on groundwater concentrations at select observation locations. For Basecase Scenario B, the TCE groundwater plume achieves stabilization at around a simulation time of 60 years. This stabilized plume is generally above MCL.

4.4 Sensitivity Analysis

The sensitivity analysis performed in this work was designed to determine, quantitatively, what input parameters have the greatest effect on the model results. The analysis was not designed to ascertain the uncertainty of the model. That determination will be performed in subsequent modeling tasks.

In general, the analysis was performed by using the calibrated local transport model, changing one parameter value at a time, and running the model and recording the concentrations at three locations (Figure 4-4), by examining the plume mass at select simulation times, and by examining contaminant flux to the two streams. Dispersivities, sorption coefficients, and constant source concentrations were varied two orders of magnitude, as detailed in Table 4-3. No attempt was made to alter more than one parameter at a time. Figures 4-5 through 4-13 show selected results, with Table 4-4 providing results on mass amounts and fluxes.

As shown, the sensitivity analysis indicates that the transport model calibration is most sensitive to changes in the source term for Scenario B. This is easily understandable, as any change in the source term will directly impact the concentrations and masses in the model. More importantly, the results show that significant concentration differences occur for 10-fold increases in longitudinal or vertical dispersivity. These results are qualitatively consistent with previous SRS modeling that indicated the greater importance of understanding dispersivity. It is interesting to note, however, that the 50-year cumulative fluxes to the streams are not significantly impacted by dispersivity changes.

It is also significant to note that the model is not very sensitive to changes in sorption coefficients (Kd). The 10x to 0.1x Kd value range represents a retardation coefficient range of 1.1 to 1.001.

Table 4-3. Sensitivity Analysis parameter variables

Calibrated Parameter Values: Kd = 4.52E-8 α_L = 5 α_T/α_L = .1 α_V/α_L = .01 Scenario B Constant TCE Source: 10.75mg/L

Parameter	Scenario	Test name	Test description	Kd	α_L	α_T/α_L	α_V/α_L	Constant Source (mg/L)
Kd	Scenario A	tenth_KdA	.1*Kd	4.52E-09	5	0.1	0.01	0
		half_KdA	.5*Kd	2.26E-08	5	0.1	0.01	0
		two_KdA	2*Kd	9.04E-08	5	0.1	0.01	0
		ten_KdA	10*Kd	4.52E-07	5	0.1	0.01	0
	Scenario B	tenth_KdB	.1*Kd	4.52E-09	5	0.1	0.01	10.75
		half_KdB	.5*Kd	2.26E-08	5	0.1	0.01	10.75
		two_KdB	2*Kd	9.04E-08	5	0.1	0.01	10.75
		ten_KdB	10*Kd	4.52E-07	5	0.1	0.01	10.75
α_L	Scenario A	tenth_longA	.1* α_L	4.52E-08	0.5	0.1	0.01	0
		half_longA	.5* α_L	4.52E-08	2.5	0.1	0.01	0
		two_longA	2* α_L	4.52E-08	10	0.1	0.01	0
		ten_longA	10* α_L	4.52E-08	50	0.1	0.01	0
	Scenario B	tenth_longB	.1* α_L	4.52E-08	0.5	0.1	0.01	10.75
		half_longB	.5* α_L	4.52E-08	2.5	0.1	0.01	10.75
		two_longB	2* α_L	4.52E-08	10	0.1	0.01	10.75
		ten_longB	10* α_L	4.52E-08	50	0.1	0.01	10.75
α_T/α_L	Scenario A	tenth_transA	.1* α_T/α_L	4.52E-08	5	0.01	0.01	0
		half_transA	.5* α_T/α_L	4.52E-08	5	0.05	0.01	0
		two_transA	2* α_T/α_L	4.52E-08	5	0.2	0.01	0
		ten_transA	10* α_T/α_L	4.52E-08	5	1	0.01	0
	Scenario B	tenth_transB	.1* α_T/α_L	4.52E-08	5	0.01	0.01	10.75
		half_transB	.5* α_T/α_L	4.52E-08	5	0.05	0.01	10.75
		two_transB	2* α_T/α_L	4.52E-08	5	0.2	0.01	10.75
		ten_transB	10* α_T/α_L	4.52E-08	5	1	0.01	10.75
α_V/α_L	Scenario A	tenth_vertA	.1* α_V/α_L	4.52E-08	5	0.1	0.001	0
		half_vertA	.5* α_V/α_L	4.52E-08	5	0.1	0.005	0
		two_vertA	2* α_V/α_L	4.52E-08	5	0.1	0.02	0
		ten_vertA	10* α_V/α_L	4.52E-08	5	0.1	0.1	0
	Scenario B	tenth_vertB	.1* α_V/α_L	4.52E-08	5	0.1	0.001	10.75
		half_vertB	.5* α_V/α_L	4.52E-08	5	0.1	0.005	10.75
		two_vertB	2* α_V/α_L	4.52E-08	5	0.1	0.02	10.75
		ten_vertB	10* α_V/α_L	4.52E-08	5	0.1	0.1	10.75
C	Scenario B	tenth_conB	.1*C	4.52E-08	5	0.1	0.01	1.075
		half_conB	.5*C	4.52E-08	5	0.1	0.01	5.37
		two_conB	2*C	4.52E-08	5	0.1	0.01	21.5
		ten_conB	10*C	4.52E-08	5	0.1	0.01	107.5

Kd values are in cubic feet per gram units.

Table 4-4. Sensitivity Analysis Results

Sensitivity Run	Plume Mass at 15 yrs (kg)	Plume Mass at 50 yrs (kg)	50 year Cumulative Mass Flux to Streams (kg)
A Basecase	***220***	***97***	***208***
A Tenth Kd	218	96	205
A Half Kd	215	95	201
A Two Kd	219	96	207
A Ten Kd	236	107	193
A Tenth Long. Disp.	227	110	192
A Half Long. Disp.	221	103	201
A Two Long. Disp.	218	90	205
A Ten Long. Disp.	221	83	199
A Tenth Trans. Disp.	218	97	205
A Half Trans. Disp.	221	99	205
A Two Trans. Disp.	218	95	202
A Ten Trans. Disp.	180	93	205
A Tenth Vert. Disp.	222	107	184
A Half Vert. Disp.	221	104	199
A Two Vert. Disp.	219	90	207
A Ten Vert. Disp.	226	84	200
B Basecase	***330***	***323***	***342***
B Tenth Kd	316	325	332
B Half Kd	330	330	341
B Two Kd	315	313	324
B Ten Kd	341	345	331
B Tenth Long. Disp.	316	290	312
B Half Long. Disp.	328	335	353
B Two Long. Disp.	325	334	321
B Ten Long. Disp.	333	362	290
B Tenth Trans. Disp.	319	317	329
B Half Trans. Disp.	319	327	335
B Two Trans. Disp.	329	330	342
B Ten Trans. Disp.	332	345	347
B Tenth Vert. Disp.	307	319	260
B Half Vert. Disp.	320	318	340
B Two Vert. Disp.	323	323	326
B Ten Vert. Disp.	339	363	281
B Tenth Source Con	231	122	220
B Half Source Con	270	215	266
B Two Source Con	422	553	468
B Ten Source Con	1,228	2,298	1,433

Grayed entries indicate +- 10% of Basecase

5.0 RECIRCULATION WELL MODELING

This section documents the detailed flow and transport modeling of a single recirculation well to determine appropriate parameters for a larger scale (i.e., plume-sized) flow and transport model. The parameters determined for the larger scale will be used in the local transport model.

A recirculation well system consists of a single borehole with two screened intervals: the lower interval is used to extract contaminated groundwater, with the upper interval used to inject the treated groundwater back into the aquifer. Under some hydraulic conditions, a vertical recirculation cell is achieved in the aquifer between the extraction and injection screens. The in-well treatment technology is considered as a "black-box" with a specified efficiency for removal of contaminants and is not explicitly modeled.

It is impractical in a plume-sized flow and transport model to simulate a recirculation well system in detail (i.e., have adequate grid refinement and layer refinement); some sort of grid and layer simplification is necessary. Analytic approaches have been developed for simple, idealized conditions. This work used a pragmatic approach by using a detailed simulation of a single recirculation well in a typical aquifer setting. The detailed model results were then compared to a large-scale (LS) representation of a similar system. Via trial-and-error, LS parameters were determined in order to match the fine-scale (FS) results. The LS parameters could then be used in a plume-sized model for adequate simulation of the recirculation well system.

Recirculation well modeling has been recently performed for the Southern Sector and for the Miscellaneous Chemical Basin and Metals Burning Pit. The Southern Sector modeling (Jackson and Looney 1996; Aleman and Hamm 1999) consisted of analytic approaches and detailed recirculation well modeling to assess capture. The Miscellaneous Chemical Basin modeling (Noffsinger 1999) consisted of detailed recirculation well modeling to assess capture and its effect on plume concentrations.

The objective of this recirculation well modeling analysis was to provide modeling parameters to be used in the fate and transport modeling of the southern TCE plume to achieve adequate representation of the recirculation well remedial technology.

This modeling effort is a part of the continuation of the recently completed regional groundwater flow model and therefore is primarily based on that work (Bills et al. 2000). The recirculation models were developed using the calibrated flow and transport parameter values. The following strategy was followed:

- Model a single recirculation well with FS discretization.
- Model the same well system on a larger-scale (roughly equivalent to the scale of the C-Area transport model).
- Average the results of the FS model to the scale of the larger-scale model.
- Compare the result and derive appropriate transport parameters at the larger-scale.
- Use the derived parameters in the C-Area transport model to assess effectiveness of various remedial alternatives.

5.1 Fine-Scale Model

The FS model was designed to simulate a single recirculation well in an "idealized" water table aquifer setting in the general location of the C-Area southern TCE plume. The boundaries were set to force right-to-left uniform flow, with grid refinement around the well, which was placed at the center of the 1000 foot by 1000 foot model domain. Although there is no true north-south direction for this representative FS model, a model orientation (as shown in Figure 5-1) will be used to facilitate discussion.

5.1.1 Model Grid Discretization and Geometry

The FS model grid was designed with a minimum grid dimension of 5 feet, a 1.1 grid size multiplier, and a maximum grid dimension of 36.5 feet resulting in 51 rows and 51 columns. The grid is symmetrical in the x- and y-axis directions, centered in the domain. The well cells are located at the middle of the domain (Figure 5-1)

There are 20 layers in the FS model, equally distributed from the water table surface to a flat bottom, with the total model saturated thickness representative of the unconfined aquifer in the C-Area model (Figure 5-2). Only the top-most layer is partially saturated.

5.1.2 Boundary Conditions and Model Parameters

All layers of the model have equivalent boundary conditions. The north and south boundaries of the model domain are no flow. The east-west boundaries are constant head with 38.8 feet and 22.5 feet respectively. The constant head values were chosen so that the FS model would have a water table surface representative of the C-Area model.

Recharge was simulated at a rate of 0.002854 feet per day, equal to the 12.5 inches per year used in the C-Area model. For the FS transport modeling, the east-side boundary was set to a constant concentration of 100.0 relative concentration units (RCUs). Recharge was assumed free of contaminant concentration. Table 5-1 provides a summary of all FS model parameters.

Table 5-1. Fine-Scale Recirculation Well Model Parameters

Parameter	Fine-Scale Model Value
Horizontal Hydraulic Conductivity	30.0 ft/d
Vertical Hydraulic Conductivity	0.3 ft/d
Longitudinal Dispersivity	5.0 ft
Transverse/ Longitudinal Dispersivity Ratio	0.1
Vertical/ Longitudinal Dispersivity Ratio	0.01
Porosity	0.2
Bulk Density	41900000.0 mg/ft3
Linear Sorption Constant	4.52e-011 ft3/mg

5.1.3 Flow and Transport Model Results

Transport runs were simulated for a time frame of at least 365 days to allow for concentrations in the model domain to achieve pseudo steady-state conditions. MT3DMS computed time-steps were on the order of 0.02 days. Results were stored at 30-day intervals and examined to ensure concentrations stabilized. To speed up the computations, not all of the model domain was used for the transport simulations. The northern and southern sections of the model domain were determined not to be affected by the recirculation well; thus no FS results were computed for these areas. An example of the resulting concentration contours is given in Figure 5-3.

5.2 Large-Scale Model

The large-scale (LS) model was designed to simulate the same domain as the FS model, but with fewer cells and layers—equivalent to that of the plume-scale model. As with the FS model, the LS model simulated a single recirculation well in an "idealized" water table aquifer setting in the general location of the C-Area southern TCE plume, with boundaries set to force right-to-left uniform flow. No grid refinement was used around the well, which was placed at the center of the model domain. The north-south direction for the LS model was the same as the FS model, and is as shown in Figure 5-4.

5.2.1 Model Grid Discretization and Geometry

The LS model grid was designed with a 7 by 7 grid for the 1000 foot by 1000 foot domain. The resulting grid cell size was approximately 142 feet square, similar to the plume-sized model. Only two layers were simulated, with the interlayer boundary being sloped and halfway between the water table surface and the flat bottom of the domain. This LS layer cutoff, (i.e., interlayer boundary) corresponds to the FS model layer 10/ layer 11 boundary. The well cells are located at the middle of the domain (Figures 5-4 and 5-5).

5.2.2 Boundary Conditions and Model Parameters

Both layers of the model have equivalent boundary conditions, and all boundary conditions are similar to the FS model. The north and south boundaries of the model domain are no flow. The

east and west boundaries are constant head with 38.8 feet and 22.5 feet respectively. Recharge was simulated at a rate of 0.002854 feet per day, equal to the 12.5 inches per year used in the C-Area model. Like the FS model, the east-side boundary for the LS transport model was set to a constant concentration of 100.0 RCUs. Recharge was assumed free of contamination. Table 5-2 provides a summary of all LS model parameters.

Table 5-2. Large-Scale Recirculation Well Model Parameters

Parameter	Large-Scale Model Value
Horizontal Hydraulic Conductivity	30.0 ft/d
Vertical Hydraulic Conductivity	0.3 ft/d
Longitudinal Dispersivity	5.0 ft
Transverse/ Longitudinal Dispersivity Ratio	0.1
Vertical/ Longitudinal Dispersivity Ratio	0.01
Porosity	0.2
Bulk Density	41900000.0 mg/ft3
Linear Sorption Constant	4.52e-011 ft3/mg

5.2.3 Flow and Transport Model Results

Transport runs were simulated at least 365 days to allow concentrations in the model domain to achieve pseudo steady-state conditions. MT3DMS computed time-steps were on the order of 1-5 days, but to increase reliability, time-steps were limited to 0.1 days. Results were stored at 30 day intervals. An example of the resulting concentration contours is given in Figure 5-6.

5.3 Large-Scale Parameter Determination

The basecase recirculation well parameters for this scaling investigation were specified as injection and extraction of 10 gpm and recirculation well efficiency of 98%. The sensitivity of the results to variations in these parameters is discussed below. Parameters were ultimately derived for the general transport model conditions (10 gpm and 95% efficiency).

As shown in Figure 5-3, the "effluent plume" of lower concentrations emanating from the recirculation well is approximately 400 feet wide. This effective width is consistent with the plume grid spacing of approximately 150 feet, allowing for capture width overlap.

The FS concentrations were averaged, with weighting based on FS volumes, to the equivalent LS grid using the following algorithm, which was implemented in a stand-alone FORTRAN program:

1. Calculate the volume of each FS grid cell.
2. Calculate the contaminant mass in each FS grid cell.
3. For each row and column in the FS grid, calculate the total mass and cell volume for all cells above the LS layer cutoff. Do the same for all cells below the LS layer cutoff.
4. For each cell in the FS grid, determine the distribution percentage (by cell area) for each LS grid cell.
5. Distribute the mass of each vertically summed FS grid row and column cell to each LS grid cell.
6. Using the mass and volumes in each LS grid cell, calculate the averaged FS values.

A comparison of the averaged FS concentrations and the LS model concentrations is shown in Figure 5-7. As shown, the LS model concentrations do not exhibit the same level of downgradient contaminant reduction in the upper and lower layers, with the averaged FS values being generally too high.

To reduce the concentrations in the LS model, a cell-by-cell contaminant concentration decay process was used. The decay process is calculated using the first-order irreversible kinetic reaction package in MT3DMS. Typically, the reaction package is used to simulate destruction of contaminants via radioactive decay or another degradation process. The implementation in the MT3DMS code requires a rate constant. Setting the rate constant to 0.0 is equivalent to no-decay.

The LS decay parameters were determined via trial and error fitting. Examination of the Figure 5-7 results indicated that additional mass removal in the upper layer was necessary. Initial fitting runs indicated the need for mass removal in the lower layer as well. A goal of the fitting process was to use decay parameters in as few cells as possible, and only along the same grid row as the recirculation well (i.e., directly along the capture and effluent zone centerline).

5.4 Recirculation Well Modeling Results

The results of the FS and equivalent LS recirculation well modeling showed the need for additional LS processes to allow proper LS simulation of FS recirculation well effects on plume concentrations. The additional LS process used in this effort was selective grid cell decay to allow removal of additional LS mass.

Based on comparisons of the averaged FS and LS results, decay parameters were necessary in three grid cells: the injection cell (designated "a1"), the cell immediately downgradient of the injection cell ("a2"), and the cell immediately downgradient of the extraction cell ("b2") (Table 5-3). No additional LS decay parameters were determined to be necessary. Results of the use of decay parameters are shown in Figure 5-8.

The LS decay parameters were relatively insensitive to variations in pumping rates, well removal efficiencies, screen lengths, and initial boundary conditions. The results are summarized in Table 5-3, and showed that the LS decay parameters were only slightly sensitive to recirculation well efficiency, with only the injection cell decay parameter requiring adjustment. With a significantly higher pumping rate, only the extraction layer LS decay parameter required adjustment. The adjustment appears to be primarily due to the difference in flow fields with different pumping rates.

As expected, changes in the boundary condition concentration have no effect on appropriate LS decay parameters. This implies that the decay parameters are independent of plume concentrations.

Averaged results for modeling the FS recirculation well system with approximate 6-foot screens (i.e., three layers for injection and three layers for extraction) were no different than for the FS system with approximate 2-foot screens (i.e., one layer). Therefore, there would be no difference for LS decay parameters.

Table 5-3. Large-Scale Recirculation Well Model Decay Parameters and Results

Case	Key Parameter Values	LS Decay Parameters
Basecase	10 gpm, 98% eff., 2 ft screens	a1 -- 0.0750 a2 -- 0.0100 b2 -- 0.0025
Lower Efficiency	Basecase with 95% eff.	**a1 -- 0.0650** a2 -- 0.0100 b2 -- 0.0025
Lowest Efficiency	Basecase with 89% eff.	**a1 -- 0.0500** a2 -- 0.0100 b2 -- 0.0025
Higher Pumping Rate	Basecase with 20 gpm	a1 -- 0.0750 a2 -- 0.0100 **b2 -- 0.0050**
Lower Boundary C	Basecase with 50 RCU boundary	a1 -- 0.0750 a2 -- 0.0100 b2 -- 0.0025
Longer Screens	Basecase with 6 foot screens	a1 -- 0.0750 a2 -- 0.0100 b2 -- 0.0025

Bold values indicate changes from basecase results.

6.0 REMEDIAL SCENARIO RESULTS

A total of nine remedial alternative scenarios were simulated for each of the source scenarios. Of the nine alternatives, five were variations of phytoremediation (i.e., pumping wells), two were variations of recirculation wells in the water table aquifer, and two were combinations of the two technologies (Figures 6-1 and 6-2 and Table 6-1).

Table 6-1. Remedial Scenario Alternatives

Scenario Name	Technology	Location[a]
Baserun#	None	N/A
recirc_uaz_center#	Recirculation Wells	Plume Center (Layers 1:2)
recirc_uaz_fence2#	Recirculation Wells	Reactor Fence (Layers 1:2)
phyto_recirc1#	Phytoremediation and Recirculation Wells	Recirc: Reactor Fence (Layers 1:2) Phyto: Distal Edge (Layers 4 and 6)
phyto_recirc2#	Phytoremediation and Recirculation Wells	Recirc: Reactor Fence (Layers 1:2) Recirc: Plume Center (Layers 1:2) Phyto: Distal Edge (Layers 4 and 6)
phyto_combo#	Phytoremediation	Reactor Fence (Layer 2, configuration 1) Plume Center (Layer 2, configuration 1) Distal Edge (Layers 4 and 6)
phyto_combo2#	Phytoremediation	Reactor Fence (Layer 2, configuration 2) Plume Center (Layer 2, configuration 2) Distal Edge (Layers 4 and 6)
phyto_L1L2_fence#	Phytoremediation	Reactor Fence (Layers 1 and 2)
phyto_L2L4_center#	Phytoremediation	Plume Center (Layers 2 and 4)
phyto_L4L6_edge#	Phytoremediation	Distal Edge (Layers 4 and 6)

a - refer to Figure 2-18 for general location of remedial alternative implementation
- will be A or B, depending on source configuration.

For TCE, the remedial alternatives were evaluated for Scenarios A and B. The remedial alternatives for each scenario were evaluated by: examining time-series plots of concentration in the three major aquifer zones (model layers 2, 4 and 6) at the six observation locations shown in Figure 4-1, visually examining plume contours in primary aquifer layers at 15 years, examining cumulative mass balance information for each alternative at 15 and 100 years, observing the total plume mass through time, and reviewing the calculated total mass flux to Castor Creek and Fourmile Branch. The resulting plots are given in Figures 6-3 through 6-20. The TCE mass balances are given in Tables 6-2 and 6-3. The plume contours are given in Figures 6-21 through 6-40.

Table 6-2. TCE Mass Results for Scenario A Remedial Alternatives

Mass Balances for "A" Remedial Scenarios

at 15 years

Scenario	Initial Plume Mass (kg)	Constant Source Cumulative Additional Mass (kg)	Cumulative Remedial Action Mass Removal (kg)	Cumulative Mass to Stream (kg)	Ending Plume Mass (kg)
BaserunA	280	0	0	70	210
recirc_uaz_centerA	280	0	90	40	150
recirc_uaz_fence2A	280	0	90	60	130
phyto_recirc1A	280	0	180	10	90
phyto_recirc2A	280	0	190	20	70
phyto_comboA	280	0	180	10	90
phyto_combo2A	280	0	140	20	120
phyto_L1L2_fenceA	280	0	90	50	140
phyto_L2L4_centerA	280	0	170	30	80
phyto_L4L6_edgeA	280	0	110	20	150

at 100 years

Scenario	Initial Plume Mass (kg)	Constant Source Cumulative Additional Mass (kg)	Cumulative Remedial Action Mass Removal (kg)	Cumulative Mass to Stream (kg)	Ending Plume Mass (kg)
BaserunA	280	0	0	270	10
recirc_uaz_centerA	280	0	90	170	20
recirc_uaz_fence2A	280	0	90	170	20
phyto_recirc1A	280	0	240	40	0
phyto_recirc2A	280	0	240	40	0
phyto_comboA	280	0	230	40	10
phyto_combo2A	280	0	200	70	10
phyto_L1L2_fenceA	280	0	90	160	30
phyto_L2L4_centerA	280	0	170	100	10
phyto_L4L6_edgeA	280	0	220	40	20

Table 6-3. TCE Mass Results for Scenario B Remedial Alternatives

Mass Balances for "B" Remedial Scenarios

at 15 years

Scenario	Initial Plume Mass (kg)	Constant Source Cumulative Additional Mass (kg)	Cumulative Remedial Action Mass Removal (kg)	Cumulative Mass to Stream (kg)	Ending Plume Mass (kg)
BaserunB	280	110	0	70	320
recirc_uaz_centerB	280	110	130	40	220
recirc_uaz_fence2B	280	110	170	60	160
phyto_recirc1B	280	110	260	10	120
phyto_recirc2B	280	110	260	20	110
phyto_comboB	280	110	270	20	100
phyto_combo2B	280	110	220	30	140
phyto_L1L2_fenceB	280	110	220	50	120
phyto_L2L4_centerB	280	110	220	30	140
phyto_L4L6_edgeB	280	110	120	20	250

at 100 years

Scenario	Initial Plume Mass (kg)	Constant Source Cumulative Additional Mass (kg)	Cumulative Remedial Action Mass Removal (kg)	Cumulative Mass to Stream (kg)	Ending Plume Mass (kg)
BaserunB	280	710	0	680	310
recirc_uaz_centerB	280	710	500	290	200
recirc_uaz_fence2B	280	710	730	160	100
phyto_recirc1B	280	710	850	50	90
phyto_recirc2B	280	710	850	50	90
phyto_comboB	280	710	890	50	50
phyto_combo2B	280	710	780	110	100
phyto_L1L2_fenceB	280	710	800	130	60
phyto_L2L4_centerB	280	710	750	130	110
phyto_L4L6_edgeB	280	710	610	160	220

For Tritium, the remedial alternatives were evaluated for Scenario A only. The remedial alternatives were evaluated by: examining cumulative activity balance information for each alternative at 15 and 100 years, observing the total plume activity through time, and reviewing the calculated total activity flux to Castor Creek and Fourmile Branch. The resulting plots are given in Figures 6-41 through 6-43. Tritium activity balances are given in Table 6-4.

Table 6-4. Tritium Activity Results for Scenario A Remedial Alternatives

Activity Balances for Tritium Remedial Scenarios

at 15 years

Scenario	Initial Plume Activity (Ci)	Cumulative Remedial Action Activity Removal (Ci)	Cumulative Decay in Plume (Ci)	Cumulative Activity to Stream (Ci)	Ending Plume Activity (Ci)
baserun_trit	5,100	0	2,300	1,600	1,200
recirc_center_trit	5,100	300	2,200	1,500	1,100
recirc_fence2_trit	5,100	0	2,300	1,600	1,200
phyto_recirc1_trit	5,100	2,200	1,800	500	600
phyto_recirc2_trit	5,100	1,800	1,900	800	800
phyto_combo_trit	5,100	1,900	1,800	700	700
phyto_combo2_trit	5,100	1,400	1,900	900	900
phyto_L1L2_fence_trit	5,100	0	2,300	1,500	1,300
phyto_L2L4_center_trit	5,100	1,000	1,900	1,100	1,100
phyto_L4L6_edge_trit	5,100	2,200	1,800	500	600

at 100 years

Scenario	Initial Plume Activity (Ci)	Cumulative Remedial Action Activity Removal (Ci)	Cumulative Decay in Plume (Ci)	Cumulative Activity to Stream (Ci)	Ending Plume Activity (Ci)
baserun_trit	5,100	0	3,100	2,000	0
recirc_center_trit	5,100	300	2,900	1,900	0
recirc_fence2_trit	5,100	0	3,100	2,000	0
phyto_recirc1_trit	5,100	2,400	2,100	600	0
phyto_recirc2_trit	5,100	2,000	2,200	900	0
phyto_combo_trit	5,100	2,200	2,100	800	0
phyto_combo2_trit	5,100	1,600	2,400	1,100	0
phyto_L1L2_fence_trit	5,100	0	3,100	2,000	0
phyto_L2L4_center_trit	5,100	1,000	2,600	1,500	0
phyto_L4L6_edge_trit	5,100	2,300	2,100	700	0

6.1 TCE Scenario A Results

Predicted groundwater concentrations in the shallow layers at the reactor fence area are almost immediately and significantly affected by alternatives that are located at the reactor fence area, with essentially no impact for those remedial alternatives located at the plume center and/or the distal edge. Since there is no continuing source, in approximately 10 years, all alternative resulting concentrations will be very low. Lower layers at the reactor fence area are at consistently low concentrations regardless of remedial alternative.

In the central plume area, groundwater concentrations are not significantly impacted by those alternatives located at the distal edge, with the other remedial alternatives having varying impact. In general, the time to reach MCLs (30 to 40 years in the lower layers) is not significantly different amongst the alternatives (of those that have an impact).

Distal edge groundwater concentrations are impacted, by varying degrees, by all remedial alternatives. Those alternatives located at the distal edge have a greater and more immediate impact. TCE flux to Castor Creek can be immediately impacted for those remedial alternatives located nearest the stream. For those alternatives located at the reactor fence line, impacts to Castor Creek flux are not seen for 5 to 10 years.

On the Fourmile Branch side of the plume, the concentrations are very low, with a correspondingly low flux. The alternatives located in the plume center have the greatest impact, with those impacts beginning around the 10 year time frame.

The mass balance information shown in Table 6-2 indicates that the short-term remedial alternative effects are relatively equivalent to long-term effects. In general, the alternatives that have the widest distribution (i.e., arre deployed at the reactor fence, plume center, and distal edge) have the largest impact on plume mass and flux to streams. The fence (only) remedial alternatives do not appear to be as effective, as expected, since there is no continuing source and the majority of the initial plume mass is downgradient of the implementation point.

Examination of the plume contours at a simulation time of 15 years (Figures 6-21 through 6-30) shows no significant difference amongst alternatives. The phytoremediation remedial alternatives appear to show slightly smaller plume extents in the UAZ and MAZ.

6.2 TCE Scenario B Results

The results for Scenario B are similar to those seen for Scenario A. At the reactor fence area, the alternatives have little impact on groundwater concentrations in the highly contaminated upper layer (model layer 2). The alternatives on the distal edge have no impact. Unlike Scenario A, the continuing source creates a relatively steady, low concentration after approximately 10 years.

In the central plume area, the phytoremediation alternative located at the distal edge does not impact concentrations in any layer. In general, the time for groundwater in this area to reach the MCL is not significantly different amongst the alternatives (that have an impact). Any impact may not be seen in the lower layers for 5 to 10 years.

All of the alternatives impact, to varying degrees, the groundwater concentrations at the distal edge. Logically, those alternatives that have implementations at the distal edge have greater impacts although in general, the impacts are not seen for 5-10 years. However, TCE flux to Castor Creek can be immediately impacted, except for those alternatives located at the fence line. In those cases, impacts are not seen for about 10 years.

On the Fourmile Branch side of the plume, the concentrations are very low, with a correspondingly low flux. The alternatives with the greatest impacts are located in the plume center, with those impacts occurring at 5-10 years.

As with Scenario A, the mass balance information shown in Table 6-3 indicates that the short-term remedial alternative effects are relatively equivalent to long-term effects. In general, the remedial alternatives which have implementations at more than one area (reactor fence, plume center, and distal edge) have good short-term and long-term impact on plume mass and flux to

streams. Unlike the Scenario A results, the fence (only) remedial alternatives are somewhat effective, likely due their ability to "cut off" the continuing source.

Examination of the plume contours at a simulation time of 15 years (Figures 6-31 through 6-40) shows there are few significant differences amongst alternatives. The phyto_combo and phyto_center remedial alternatives appear to show slightly smaller plume extents in the UAZ and MAZ.

6.3 Tritium Results

Tritium flux to Castor Creek is only significantly impacted from phytoremediation alternatives located closer to the creek, with any impact beginning from about 1-5 years. Tritium flux to Fourmile Branch is very low, and no impact from remedial alternatives is noted. Even with no remedial action, total plume tritium activity and stream flux is very small by 30 years, primarily due to natural radioactive decay.

7.0 MODEL LIMITATIONS

The following paragraphs summarize the reliability of the transport model calibration and the limitations of model predictions that arise from uncertainties in the modeling approach and data used for this modeling task. These limitations require careful consideration for future use in the remedial decision process.

Uncertainty is inherent in any modeling process, and the uncertainties associated with this modeling task have been managed by using conservative assumptions, obtaining a good calibration, and analyzing the sensitivity of the model predictions. As new hydrogeological data and remedial alternative data become available, the HCM and RACMs can be updated to reduce the uncertainty of model predictions.

The use of a simplistic source term and homogeneous and simplistic transport parameter zones introduces uncertainty into the model results. This representation of reality is a gross

simplification of real world conditions. An attempt to manage the uncertainty inherent in this approach has been undertaken by choosing conservative values for model parameters and by analyzing a wide range of hydrogeologic parameter information in the sensitivity analysis.

Uncertainty in the transport model is also produced by the limited dataset of calibration targets (contaminant concentration monitoring and characterization data). The well and CPT data used as targets are not distributed throughout the plume, are not fully representative of the various aquifer units, and are from a single point in time. The resulting TCE and tritium plumes are only rough approximations of current groundwater conditions.

Although the regional flow model calibration was reasonable for the area nearest the waste units, it did not include the complete area covered by plume movement. Real flow could be different from that assumed in the model.

Although a significant amount of characterization data has been obtained, when compared to the model domain and potential flow history, the tritium and TCE plumes associated with the C-Reactor waste units have incomplete configuration and concentration estimations. As mentioned elsewhere, most of the plume configuration information is based on a single point-in-time CPT data suite, so historical plume transport directions and travel times (trend data) are not available for calibration. Although a best-fit of transport paths and current plume concentrations was attempted during the calibration process to match the characterization data, exact matching of all characterization data has not been achieved. For example, eliminating out-lying points, vertical averaging of data, developing the model source, and model plume spreading are all factors that contribute to an inexact match of all characterization data.

The results of this modeling should be only considered as generally representative of the groundwater flow and transport system near the C-Reactor area and should not be used to support small-scale predictions of flow (or transport). Because of the conservative assumptions, the model can be used to compare remedial alternatives and to predict general flow directions and travel times.