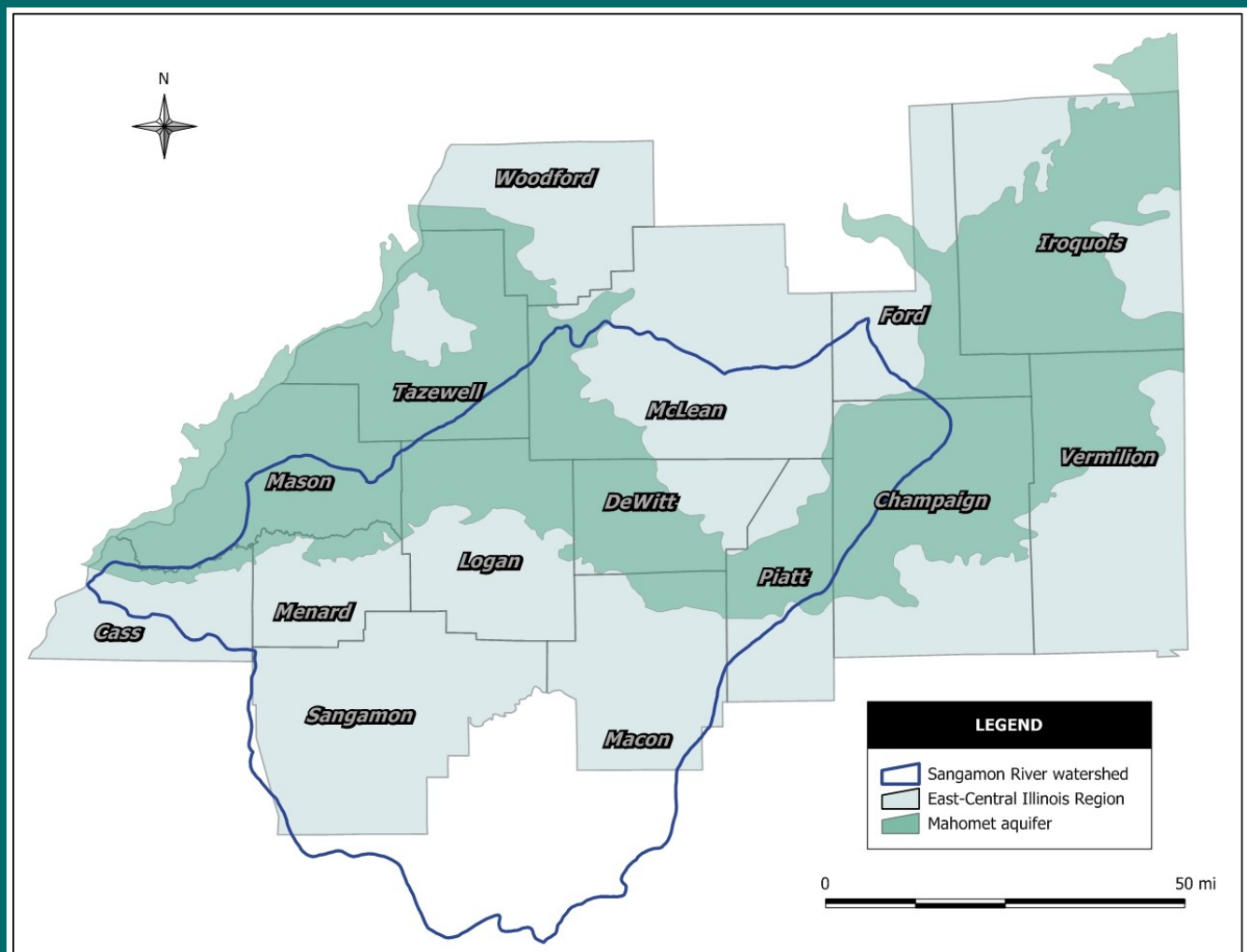


Water Demand Scenarios for the East-Central Illinois Planning Region: 2005-2050

FINAL REPORT

Prepared for:
East-Central Regional Water
Supply Planning Committee



Prepared by:
Wittman Hydro Planning Associates, Inc
Bloomington, IN
August 29, 2008

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FINAL PROJECT REPORT

Prepared for:

The East-Central Regional Water Supply Planning Committee

Prepared by:

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Contents

Acknowledgments	i
Table of Contents	ii
List of Figures	viii
List of Tables	xv
Key Terms	xxvi
Abbreviations and Units	xxvii
Executive Summary	xxix
1 Introduction	1
1.1 Purpose	5
1.2 Objective	5
1.3 Methodology	6
1.4 Historical water-withdrawals and water-demand variable data	6
1.4.1 Water-demand sectors	6
1.4.2 Data years	7
1.4.3 Study areas	7
1.4.4 Water-withdrawal data	7
1.4.5 Independent variable data	7
1.5 Public outreach	10
1.6 Mathematical relationships between water-withdrawal and water-demand variables	11
1.6.1 Unit-use coefficient method	13
1.6.2 Multiple regression method	13
1.6.3 Model estimation and validation procedures	14
1.7 Future water-withdrawal scenarios	15
1.7.1 Scenario 1 - Baseline (BL)	15
1.7.2 Scenario 2 - Less resource intensive (LRI)	16
1.7.3 Scenario 3 - More resource intensive (MRI)	16

1.8	Water-withdrawal estimates	16
1.9	Normal weather and impacts of using normal weather in future scenarios	17
1.10	Uncertainty - data quality, drought, and modeling	19
1.10.1	Data quality	19
1.10.1.1	Implications of data quality	21
1.10.1.2	Data recommendations	22
1.10.2	Consideration of drought	22
1.10.3	Uncertainty of future demands	24
1.11	Organization of this report	25
2	Public Water Supply (PWS)	27
2.1	Background	28
2.2	PWS multiple regression method	28
2.2.1	PWS study areas	29
2.3	Self-supplied domestic unit-use coefficient method	29
2.4	PWS historical data	29
2.4.1	Historical water withdrawals	32
2.4.2	Population served	35
2.4.3	Independent variables	36
2.4.3.1	Marginal price of water	36
2.4.3.2	Median household income	37
2.4.3.3	Employment to population ratio	37
2.4.3.4	Summer temperature and summer precipitation	37
2.4.3.5	Conservation trend	38
2.5	PWS water-withdrawal relationships	38
2.6	Future data	46
2.6.1	Future population	46
2.6.1.1	PWS population served	46
2.6.1.2	Domestic population	56
2.6.2	Future explanatory variables	56
2.6.2.1	Weather variables - temperature and precipitation	57
2.6.2.2	Employment-to-population ratios	59
2.6.2.3	Marginal price of water	59
2.6.2.4	Median household income	60
2.7	Scenarios	60

2.7.1	Scenario 1 - Baseline (BL)	61
2.7.2	Scenario 2 - Less resource intensive (LRI)	62
2.7.3	Scenario 3 - More resource intensive (MRI)	62
2.8	Results	63
2.8.1	PWS results	63
2.8.2	Groundwater and surface water withdrawals	76
2.8.3	Peaking data for public water supply	78
2.8.4	Self-supplied domestic results	79
3	Self-supplied Power Generation (PG)	80
3.1	Background	81
3.1.1	Types of cooling	81
3.1.2	Theoretical cooling water requirements	82
3.1.3	Theoretical vs. actual water use	84
3.2	Generation and water withdrawals in East-Central Illinois	85
3.2.1	Electric generation	86
3.2.2	Reported plant-level withdrawals	88
3.3	Water-withdrawal relationships	91
3.3.1	Once-through cooling systems	91
3.3.2	Closed-loop cooling systems	93
3.4	Future demand for electricity	93
3.5	Scenarios	94
3.5.1	Scenario 1 - Baseline (BL)	96
3.5.2	Scenario 2 - Less resource intensive (LRI)	97
3.5.3	Scenario 3 - More resource intensive (MRI)	98
3.6	Results	99
4	Self-supplied Commercial and Industrial (C&I)	108
4.1	Background	109
4.2	Multiple regression method	109
4.2.1	Commercial and industrial water-demand relationships	109
4.3	Historical data	113
4.3.1	Historical water withdrawals	113
4.3.2	Total county employment	114
4.3.3	Independent variables	116

4.3.3.1	Weather variables - cooling degree days and precipitation	116
4.3.3.2	Percent health services employment, percent retail trade employment, and percent manufacturing employment	117
4.3.3.3	Percent self-supplied commercial and industrial withdrawals	117
4.3.3.4	Conservation trend	118
4.4	Commercial and industrial multiple regression model	118
4.5	Future data	119
4.5.1	Future employment population	123
4.5.2	Future values of independent variables	124
4.5.2.1	Weather variables - cooling degree days and precipitation	133
4.5.2.2	Percent health services, retail trade, and manufacturing employment	135
4.5.2.3	Percent self-supplied commercial and industrial demand	135
4.5.2.4	Conservation trend	135
4.6	Scenarios	138
4.6.1	Water intensive facilities	138
4.6.2	Scenario 1 - Baseline (BL)	139
4.6.3	Scenario 2 - Less resource intensive (LRI)	141
4.6.4	Scenario 3 - More resource intensive (MRI)	142
4.7	Results	142
4.7.1	Groundwater and surface water withdrawals	143
5	Self-supplied Irrigation and Agriculture (IR&AG)	157
5.1	Background	158
5.2	Livestock	160
5.2.1	Livestock historical withdrawals	160
5.2.2	Future livestock water withdrawals	161
5.3	Irrigation	161
5.3.1	Historical irrigation withdrawals	166
5.3.2	Future irrigated acres	170
5.3.2.1	Irrigated cropland	172
5.3.2.2	Golf courses	172
5.3.3	Weather variables - Rainfall deficit	172
5.4	Scenarios	176
5.4.1	Scenario 1 - Baseline (BL)	179

5.4.2	Scenario 2 - Less resource intensive (LRI)	180
5.4.3	Scenario 3 - More resource intensive (MRI)	180
5.5	Results	181
5.5.1	Groundwater versus surface water withdrawals	181
6	Sensitivity to Climate Change and Drought	195
6.1	Background	196
6.1.1	Climate change and global warming	196
6.1.2	Climate change models in Illinois	196
6.1.3	Drought	200
6.2	Public water supply sector	200
6.2.1	Impacts of climate change	201
6.2.2	Impacts of drought	206
6.3	Power generation sector	206
6.4	Commercial and industrial sector	209
6.4.1	Impacts of climate change	209
6.4.2	Impacts of drought	210
6.5	Irrigation and agriculture sector	217
6.5.1	Impacts of climate change	218
6.5.2	Impacts of drought	218
6.6	Summary of climate change and drought impacts	226
7	Summary and Conclusions	229
7.1	Regional results	230
7.2	County results	234
7.3	Data issues	239
	Bibliography	242
A	Public Outreach	248
B	Public Water Supply Sector	266
B.1	Public water supply model development	267
B.1.1	Structural model	267
B.1.2	Model with Year 2005 binary	268
B.1.3	Model with fixed effects of study areas	269

B.1.4	Effects of outliers on model coefficients	270
B.1.5	Final regression model	279
B.1.6	In-sample prediction error	284
B.2	Public supply data tables	293
C	Power Generation Sector	314
D	Commercial and Industrial Sector	317
D.1	General regression method	318
D.2	Commercial and industrial model development procedures	321
D.2.1	Structural model	321
D.2.2	Model with fixed effects of study areas	323
D.2.3	Effects of outliers on model coefficients	323
D.2.4	Final regression models	325
D.2.5	In-Sample prediction errors	330
D.3	Weather stations used in the study	337
D.4	Commercial and industrial data tables	339
E	Irrigation and Agriculture Sector	348
F	Sensitivity Analysis	374
F.1	Public water supply sector climate change results by county	375
F.2	Commercial and industrial sector climate change results by county	380
F.3	Irrigation and agriculture sector climate change results by county	385
G	Summary	390

List of Figures

A	The fifteen-county East-Central Water Supply Planning Region in Illinois.	xxx
B	Example of normal versus recorded weather data.	xxxv
C	Example of the effects of using climatic normal temperature and precipitation.	xxxvi
D	Map of 26 public water supply study areas modeled in addition to the 15 counties within the East-Central Region.	xxxviii
E	Future water withdrawals for the public water supply sector.	xli
F	Future water withdrawals for the self-supplied domestic sector.	xliii
G	Future water withdrawals for the power generation sector.	xlvii
H	Future water withdrawals for the commercial and industrial sector.	xlix
I	Future water withdrawals for the irrigation and agriculture sector.	liv
J	County water withdrawals in East-Central Illinois in 2050 by demand sector for the baseline scenario.	lxi
K	Example of potential drought effects.	lxiv
1.1	The two priority planning regions in Illinois identified through work by the Illinois State Water Survey.	3
1.2	The 15-county East-Central Water Supply Planning Region in Illinois.	4
1.3	Map of 41 public water supply study areas in East-Central Illinois. The study areas include 26 municipalities and 15 county rural areas which represent all public water suppliers outside the 26 municipalities.	8
1.4	Example of inter-annual variation in temperature and precipitation compared to climatic normals.	18
1.5	Example of the effects of using climatic normal temperature and precipitation.	20
1.6	Example of potential drought effects.	23
2.1	Map of 26 public water supply study areas modeled in addition to the 15 counties within the East-Central Region.	30

2.2	Structural model for public water supply sector in East-Central Illinois.	40
2.3	Comparison of the historical reported and the model-generated gallons per capita per day water withdrawals from 1985-2005.	45
2.4	Historical and future resident population for the Cass and Champaign County study areas in East-Central Illinois.	48
2.5	Historical and future resident population for the DeWitt and Ford County study areas in East-Central Illinois.	49
2.6	Historical and future resident population for the Iroquois and Logan County study areas in East-Central Illinois.	50
2.7	Historical and future resident population for the Macon and Mason County study areas in East-Central Illinois.	51
2.8	Historical and future resident population for the McLean and Menard County study areas in East-Central Illinois.	52
2.9	Historical and future resident population for the Piatt and Sangamon County study areas in East-Central Illinois.	53
2.10	Historical and future resident population for the Tazewell and Vermilion County study areas in East-Central Illinois.	54
2.11	Historical and future resident population for the Woodford County study areas in East-Central Illinois.	55
2.12	Example of inter-annual variation in temperature and precipitation compared to climatic normals.	58
2.13	Historical and future public water supply withdrawals for the baseline scenario, the less resource intensive scenario, and the more resource intensive scenario for East-Central Illinois.	64
2.14	Public water supply historical and future water withdrawals for the Cass and Champaign County study areas.	68
2.15	Public water supply historical and future water withdrawals for the DeWitt and Ford County study areas.	69
2.16	Public water supply historical and future water withdrawals for the Iroquois and Logan County study areas.	70
2.17	Public water supply historical and future water withdrawals for the Macon and Mason County study areas.	71
2.18	Public water supply historical and future water withdrawals for the McLean and Menard County study areas.	72

2.19	Public water supply historical and future water withdrawals for the Piatt and Sangamon County study areas.	73
2.20	Public water supply historical and future water withdrawals for the Tazewell and Vermilion County study areas.	74
2.21	Public water supply historical and future water withdrawals for the Woodford County study areas.	75
3.1	Location of six significant thermoelectric power generating plants within the 15-county East-Central Region.	87
3.2	Relationship between total water withdrawals and gross generation for eleven once-through plants in East-Central and Northeastern Illinois	92
3.3	Historical and future thermoelectric water withdrawals for the baseline scenario, the less resource intensive scenario, and the more resource intensive scenario for East-Central Illinois.	101
3.4	Historical and future power generation water withdrawals from the baseline scenario for the Clinton and Havana plants.	105
3.5	Historical and future power generation water withdrawals from the baseline scenario for the Powerton and Dallman (new) plants.	106
3.6	Historical and future power generation water withdrawals from the baseline scenario for the Vermilion and Dallman (existing) plants.	107
4.1	Structural model for commercial and industrial sector in East-Central Illinois. . . .	120
4.2	Reported versus modeled gallons per employee per day.	121
4.3	Historical and future employment populations for Cass and Champaign counties in East-Central Illinois.	125
4.4	Historical and future employment populations for DeWitt and Ford counties in East-Central Illinois.	126
4.5	Historical and future employment populations for Iroquois and Logan counties in East-Central Illinois.	127
4.6	Historical and future employment populations for Macon and Mason counties in East-Central Illinois.	128
4.7	Historical and future employment populations for McLean and Menard counties in East-Central Illinois.	129
4.8	Historical and future employment populations for Piatt and Sangamon counties in East-Central Illinois.	130

4.9	Historical and future employment populations for Tazewell and Vermilion counties in East-Central Illinois.	131
4.10	Historical and future employment populations for Woodford County in East-Central Illinois.	132
4.11	Example of inter-annual variation in temperature and precipitation compared to climatic normals.	134
4.12	Existing and proposed water intensive industries in the East-Central Illinois region. <i>Note: Water intensive industries are represented by ethanol production facilities due to the need to tie water withdrawals to specific locations. Ethanol facilities were chosen as a surrogate because they are currently the most well-known and understood growing industry for this region.</i>	140
4.13	Historical and future self-supplied commercial and industrial withdrawals for the baseline scenario, the less resource intensive scenario, and the more resource intensive scenario for East-Central Illinois.	147
4.14	Self-supplied commercial and industrial historical and future water withdrawals for Cass and Champaign counties in East-Central Illinois. <i>Note: New water intensive industry added in Champaign County in 2010 and in Cass County in 2015.</i>	148
4.15	Self-supplied commercial and industrial historical and future water withdrawals for DeWitt and Ford counties in East-Central Illinois. <i>Note: New water intensive industry added in Ford County in 2010.</i>	149
4.16	Self-supplied commercial and industrial historical and future water withdrawals for Iroquois and Logan counties in East-Central Illinois. <i>Note: New water intensive industry added in Iroquois County in 2010 and in Logan County in 2015.</i>	150
4.17	Self-supplied commercial and industrial historical and future water withdrawals for Macon and Mason counties in East-Central Illinois. <i>Note: 1985-2000 water withdrawals for Macon County has ADM withdrawals added; see Section 4.3.1 for explanation. Note: New water intensive industry added in Mason County in 2015.</i>	151
4.18	Self-supplied commercial and industrial historical and future water withdrawals for McLean and Menard counties in East-Central Illinois. <i>Note: New water intensive industry added in McLean County in 2015.</i>	152
4.19	Self-supplied commercial and industrial historical and future water withdrawals for Piatt and Sangamon counties in East-Central Illinois.	153

4.20	Self-supplied commercial and industrial historical and future water withdrawals for Tazewell and Vermilion counties in East-Central Illinois. Note: Expansion of water intensive industry added in Tazewell County in 2010 and new water intensive industry added in Vermilion County in 2010.	154
4.21	Self-supplied commercial and industrial historical and future water withdrawals for Woodford County in East-Central Illinois.	155
5.1	Example of inter-annual variation in temperature and precipitation compared to climatic normals.	177
5.2	Historical and future irrigation and agriculture withdrawals for the baseline scenario, the less resource intensive scenario, and the more resource intensive scenario for East-Central Illinois.	185
5.3	Irrigation and agriculture historical and future water withdrawals for Cass and Champaign counties in East-Central Illinois.	186
5.4	Irrigation and agriculture historical and future water withdrawals for DeWitt and Ford counties in East-Central Illinois.	187
5.5	Irrigation and agriculture historical and future water withdrawals for Iroquois and Logan counties in East-Central Illinois.	188
5.6	Irrigation and agriculture historical and future water withdrawals for Macon and Mason County study areas in East-Central Illinois.	189
5.7	Irrigation and agriculture historical and future water withdrawals for McLean and Menard counties in East-Central Illinois.	190
5.8	Irrigation and agriculture historical and future water withdrawals for Piatt and Sangamon counties in East-Central Illinois.	191
5.9	Irrigation and agriculture historical and future water withdrawals for Tazewell and Vermilion counties in East-Central Illinois.	192
5.10	Irrigation and agriculture historical and future water withdrawals for Woodford County in East-Central Illinois.	193
6.1	Global climate model scenarios on potential departures from normal annual temperature: 2005-2050 (ISWS, 2007).	198
6.2	Global climate model scenarios on potential departures from normal annual precipitation: 2005-2050 (ISWS, 2007).	199
6.3	Sensitivity analysis results for public water supply sector.	207
6.4	Sensitivity analysis results for commercial and industrial sector.	215

6.5	Sensitivity analysis results for irrigation and agriculture sector.	224
7.1	Historical and future water withdrawals in East-Central Illinois from 1985 to 2050.	232
7.2	Percent of total water withdrawals by demand sector in East-Central Illinois in 2005 (Normal) and 2050 for the baseline scenario.	233
7.3	County water withdrawals in East-Central Illinois in 2050 by demand sector for the baseline scenario.	237
7.4	Future withdrawals for each county, by demand sector, for the year 2050 (in MGD) for the baseline scenario. <i>Power generation sector not included.</i>	238
B.1	Effects of binary site variables and spike dummies on estimated elasticity of temperature.	272
B.2	Effects of binary site variables and spike dummies on estimated elasticity of precipitation.	274
B.3	Effects of binary site variables and spike dummies on estimated elasticity of marginal price.	275
B.4	Effects of binary site variables and spike dummies on estimated elasticity of median household income.	276
B.5	Effects of binary site variables and spike dummies on estimated coefficient of population to employment ratio.	277
B.6	Effects of binary site variables and spike dummies on estimated coefficient of conservation trend variable.	278
B.7	Residuals plot for the model in Table B.6.	283
D.1	Effects of binary site variables and spike dummies on estimated elasticity of cooling degree days.	325
D.2	Effects of binary site variables and spike dummies on estimated elasticity of precipitation.	327
D.3	Effects of binary site variables and spike dummies on estimated coefficient of percent employment in health services.	330
D.4	Effects of binary site variables and spike dummies on estimated coefficient of percent employment in retail trade.	331
D.5	Effects of binary site variables and spike dummies on estimated coefficient of percent employment in manufacturing.	331
D.6	Effects of binary site variables and spike dummies on estimated coefficient of percent self-supplied commercial and industrial water demand.	332

D.7	Effects of binary site variables and spike dummies on estimated coefficient of conservation trend variable.	336
D.8	Residuals plot for the model in Table D.5.	336
G.1	Summary of water withdrawals for Cass and Champaign counties.	406
G.2	Summary of water withdrawals for DeWitt County.	407
G.3	Summary of water withdrawals for Ford and Iroquois counties.	408
G.4	Summary of water withdrawals for Logan and Macon counties.	409
G.5	Summary of water withdrawals for Mason and McLean counties.	410
G.6	Summary of water withdrawals for Menard and Piatt counties.	411
G.7	Summary of water withdrawals for Sangamon and Tazewell counties. <i>Note: Large Tazewell County Power Generation withdrawals in 1990 due variation in reporting method. See Chapter 3 for more information.</i>	412
G.8	Summary of water withdrawals for Vermilion and Woodford counties.	413

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List of Tables

A	Reported historical water withdrawals in million gallons per day (MGD) for each water sector, 1985-2005.	xxxii
B	Drivers of water demand and elasticities of explanatory variables used to estimate water withdrawals in East-Central Illinois.	xxxiii
C	Factors affecting future water demands in the public water supply sector in East-Central Illinois for each of scenarios.	xxxix
D	Public water supply results for the baseline (BL), less resource intensive (LRI), and more resource intensive (MRI) scenarios.	xl
E	Total withdrawals for the self-supplied domestic water sector, 2005-2050.	xlii
F	Factors affecting future water demands for power generation in East-Central Illinois for each of scenarios.	xlvi
G	Electric power generation and water withdrawals for the baseline (BL), less resource intensive (LRI), and more resource intensive (MRI) scenarios in East-Central Illinois.	xlvi
H	Factors affecting future the commercial and industrial water demands in East-Central Illinois for each of scenarios.	l
I	Results for commercial and industrial sector for the baseline (BL), less resource intensive (LRI), and more resource intensive (MRI) scenarios for East-Central Illinois, 2005-2050.	li
J	Factors affecting future agriculture and irrigation water demands in East-Central Illinois for each of scenarios.	lii
K	Summary of irrigated acres and irrigation and agriculture water withdrawals for the baseline (BL), less resource intensive (LRI), and more resource intensive (MRI) scenarios in East-Central Illinois.	liii
L	Effects of possible climate change on water withdrawals (in MGD)	lvi
M	Effects of drought on water withdrawals (in MGD) in East-Central Illinois.	lvii

N	Summary of water withdrawals in East-Central Illinois (in MGD).	lviii
O	Future withdrawals for each county, by demand sector, for the year 2050 (in MGD) for the baseline scenario.	lx
1.1	The 26 municipal public water supply study areas and their population growth [Census, 2000]. <i>Note: These 26 study areas are in addition to the 15-county study areas representing the public water suppliers outside these high-growth areas.</i>	9
1.2	Schedule and information for the four multi-county public outreach meetings held in August 2007.	12
2.1	The 26 public water supply study areas that were modeled in addition to the 15 counties within the East-Central Illinois Region [Census, 2000].	31
2.2	Historical water withdrawals (in MGD) for each public supply study area in East- Central Illinois.	33
2.2	Historical water withdrawals (in MGD) for each public supply study area in East- Central Illinois.	34
2.2	Historical water withdrawals (in MGD) for each public supply study area in East- Central Illinois.	35
2.3	The structural portion of the log-linear model for per capita water withdrawals in the public supply sector.	39
2.4	Examples of estimated elasticities of four explanatory variables in public water supply water-demand models.	41
2.4	Examples of estimated elasticities of four explanatory variables in public water supply water-demand models.	42
2.5	Comparison of model-generated and reported water withdrawals in 2005 for public water supply sector.	43
2.5	Comparison of model-generated and reported water withdrawals in 2005 for public water supply sector.	44
2.6	Total population for each 15-County East-Central Illinois Region.	47
2.7	Total self-supplied domestic population, 2005-2050.	56
2.8	Public water supply results for the baseline (BL) scenario.	65
2.9	Public water supply results for the less resource intensive (LRI) scenario.	66
2.10	Public water supply results for the more resource intensive (MRI) scenario.	67
2.11	Future percent groundwater and surface water for each public supply study area in East-Central Illinois.	76

2.11	Future percent groundwater and surface water for each public supply study area in East-Central Illinois.	77
2.11	Future percent groundwater and surface water for each public supply study area in East-Central Illinois.	78
2.12	Total withdrawals for the self-supplied domestic water sector, 2005-2050.	79
3.1	Average withdrawal rates and evaporative loss rates of cooling water based on Energy Information Administration data.	85
3.2	Thermoelectric water withdrawals in East-Central Illinois (1990-2005).	86
3.3	Capacities and generation in large power plants located in East-Central Illinois.	89
3.4	Generation and water withdrawals of large power plants located in East-Central Illinois.	90
3.5	Estimation of per capita generation and consumption of electricity.	95
3.6	Population-based estimates of future demand for electricity in East-Central Illinois.	95
3.7	Electric power generation and water withdrawals for Baseline (BL) Scenario in East-Central Illinois.	100
3.8	Electric power generation and water withdrawals for less resource intensive (LRI) scenario in East-Central Illinois.	102
3.9	Electric power generation and water withdrawals for more resource intensive (MRI) scenario in East-Central Illinois.	103
3.10	Electric power generation and water withdrawals in East Central Illinois.	104
4.1	County-level estimates of self-supplied commercial and industrial water demand in 2005.	111
4.2	County-level self-supplied and purchased commercial and industrial water withdrawals in 2005.	112
4.3	Historical self-supplied commercial and industrial water withdrawals as reported to Illinois State Water Survey.	115
4.4	Structural portion of the regression model for commercial and industrial water demand in East-Central Illinois.	119
4.5	Comparison of model-generated and reported water withdrawals in 2005 for self-supplied commercial and industrial sector.	122
4.6	2005 total employment, 2050 total employment projections, and number of employees added per year.	124

4.7	Projected 2004-2014 annual compound growth rates for health services, retail trade, and manufacturing employment.	136
4.8	Historical and assumed percent of self-supplied commercial and industrial withdrawals.	137
4.9	Existing and proposed water intensive industries (represented by ethanol production plants) included in the East-Central Illinois regional water demands.	139
4.10	Baseline scenario results for commercial and industrial sector for East-Central Illinois, 2005-2050.	144
4.11	Less resource intensive scenario results for commercial and industrial sector for East-Central Illinois, 2005-2050.	145
4.12	More resource intensive scenario results for commercial and industrial sector for East-Central Illinois, 2005-2050.	146
4.13	Percent of total withdrawals that are groundwater and surface water.	156
5.1	Total land area, cropland, and irrigated cropland in East-Central Illinois counties in 2002.	159
5.2	Estimated amount of unit water demand by animal type per day.	160
5.3	Estimated numbers of livestock in the East-Central Illinois study area in 2002.	162
5.4	USGS estimated water withdrawals (MGD) for livestock 1985-2005.	163
5.5	Estimated numbers of livestock in the East-Central Illinois study area in 2050.	164
5.6	Rainfall deficits in East-Central Illinois for 1985-2005 growing seasons.	167
5.7	Irrigated cropland (in acres) in East-Central Illinois counties, 1987-2007.	169
5.8	Irrigation water withdrawals (MGD) in East-Central Illinois for 1985-2005.	171
5.9	Estimates of irrigated cropland for 2002, 2007, 2020, and 2050.	173
5.10	Golf courses built in each decade from 1900-2007 in East-Central Illinois.	174
5.11	Assumed increase in golf course acres irrigated every five years in East-Central Illinois.	175
5.12	Annual rainfall deficit as calculated from climatic normals.	178
5.13	Summary of irrigated acres for the baseline (BL), less resource intensive (LRI), and more resource intensive (MRI) scenarios in East-Central Illinois.	179
5.14	Total withdrawals for the baseline scenario for the irrigation and agriculture.	182
5.15	Total withdrawals for the less resource intensive scenario for the irrigation and agriculture.	183
5.16	Total withdrawals for the more resource intensive scenario for the irrigation and agriculture.	184

5.17	Source of water withdrawals for cropland irrigation.	194
6.1	Impact of a 6°F temperature increase on public water supply withdrawals.	201
6.2	Impact of 2.5 inches increase in growing season precipitation on public water supply withdrawals.	202
6.3	Impact of 3.5 inches decrease in growing season precipitation on public water supply withdrawals.	203
6.4	Impact of combined 6°F temperature increase and 2.5 inches precipitation increase on public water supply withdrawals.	204
6.5	Impact of combined 6°F temperature increase and 3.5 inches precipitation decrease on public water supply withdrawals.	205
6.6	Impact of drought-induced precipitation deficit on total public supply withdrawals (compared to baseline scenario).	208
6.7	Estimated effects of 6°F temperature increase, represented by an increase in annual cooling degree days, on commercial and industrial (C&I) water withdrawals.	210
6.8	Estimated effects of 2.5 inches precipitation increase on commercial and industrial (C&I) water withdrawals.	211
6.9	Estimated effects of 3.5 inches precipitation decrease on commercial and industrial (C&I) water withdrawals.	212
6.10	Impact of combined increase in temperature and 2.5 inches increase in precipitation on self-supplied commercial and industrial withdrawals.	213
6.11	Impact of combined increase in temperature and 3.5 inches decrease in precipitation on self-supplied commercial and industrial withdrawals.	214
6.12	Impact of drought-induced precipitation on commercial and industrial (C&I) water withdrawals.	216
6.13	Impact of a 6°F temperature increase of on irrigation and agriculture (IR&AG) withdrawals.	219
6.14	Impact of 2.5 inches precipitation increase on irrigation and agriculture (IR&AG) withdrawals.	220
6.15	Impact of 3.5 inches precipitation decrease on irrigation and agriculture (IR&AG) withdrawals.	221
6.16	Effects of 6°F temperature increase and 2.5 inches precipitation increase on irrigation and agriculture withdrawals.	222
6.17	Effects of 6°F temperature increase and 3.5 inches precipitation decrease on irrigation and agriculture withdrawals.	223

6.18	Impact of drought-induced precipitation deficit on irrigation and agriculture withdrawals (compared to baseline scenario).	225
6.19	Effects of possible climate change on water withdrawals (in MGD) in East-Central Illinois.	227
6.20	Effects of drought on water withdrawals (in MGD) in East-Central Illinois.	228
7.1	Summary of water withdrawals in East-Central Illinois (in MGD).	231
7.2	Future withdrawals for each county, by demand sector, for the year 2050 (in MGD) for the baseline scenario.	236
B.1	Structural log-linear model of per capita water demand in public water supply sector (ln GPCD).	268
B.2	Re-estimated log-linear model of per capita water demand with Year 2005 binary (ln GPCD).	269
B.3	Re-estimated log-linear model of per capita water demand with study area binaries (ln GPCD).	271
B.4	Re-estimated log-linear model of per capita water demand with study area binaries (ln GPCD). (continued)	272
B.5	Effects of adding binary study area and spike dummies on estimated regression coefficients of the structural model.	273
B.6	Final log-linear model of per capita water demand in public water supply sector (ln GPCD).	280
B.6	Final log-linear model of per capita water demand in public water supply sector (ln GPCD).	281
B.6	Final log-linear model of per capita water demand in public water supply sector (ln GPCD).	282
B.7	Actual and predicted values of per capita water demand in historical data.	286
B.8	Actual and predicted values of per capita water demand in historical data.	287
B.9	Actual and predicted values of per capita water demand in historical data.	288
B.10	Actual and predicted values of per capita water demand in historical data.	289
B.11	Actual and predicted values of per capita water demand in historical data.	290
B.12	Actual and predicted values of per capita water demand in historical data.	291
B.13	Actual and predicted values of per capita water demand in historical data.	292
B.15	Normal maximum summer temperature and summer precipitation values used in each study area in East-Central Illinois.	293

B.15 Normal maximum summer temperature and summer precipitation values used in each study area in East-Central Illinois.	294
B.14 Weather stations in East-Central Illinois.	295
B.16 Historical values of dependent and independent variables for public water supply. .	296
B.17 Historical values of dependent and independent variables for public water supply. .	297
B.18 Historical values of dependent and independent variables for public water supply. (continued)	298
B.19 Historical values of dependent and independent variables for public water supply. (continued)	299
B.20 Historical values of dependent and independent variables for public water supply. (continued)	300
B.21 Historical values of dependent and independent variables for public water supply. (continued)	301
B.22 Historical values of dependent and independent variables for public water supply. (continued)	302
B.23 Historical values of dependent and independent variables for public water supply. (continued)	303
B.24 Historical values of dependent and independent variables for public water supply. (continued)	304
B.25 Future withdrawals (in MGD) for public water supply baseline (BL) scenario for each study area.	305
B.26 Future withdrawals (in MGD) for public water supply baseline (BL) scenario for each study area. (continued)	306
B.27 Future withdrawals (in MGD) for public water supply less resource intensive (LRI) for each study area.	307
B.28 Future withdrawals (in MGD) for public water supply less resource intensive (LRI) scenario for each study area. (continued)	308
B.29 Future withdrawals (in MGD) for public water supply more resource intensive (MRI) scenario for each study area.	309
B.30 Future withdrawals (in MGD) for public water supply more resource intensive (MRI) scenario for each study area. (continued)	310
B.31 Estimated future population served for each public water supply study area.	311
B.32 Estimated future population served for each public water supply study area.	312

B.33	Estimated future water withdrawals (in MGD) for the self-supplied domestic sector for the baseline scenario.	313
C.1	Power generator status from ISWS data.	315
C.2	Power generator status from ISWS data (cont.).	316
D.1	Structural log-linear model of per employee water demand in <i>Commerical</i> and Industrial sector (ln GPED).	322
D.2	Re-estimated log-linear model of per employee water demand with study site binaries (ln GEPD).	324
D.3	Effects of adding binary study area and spike dummies on estimated regression coefficients of the structural commercial and industrial model.	326
D.4	Step 6 log-linear model of per employee water demand in commercial and industrial sector (ln GPED).	328
D.5	Final log-linear model per employee water demand in commercial and industrial sector (ln GPED).	329
D.6	Model-predicted and actual values of per employee water demand.	332
D.6	Model-predicted and actual values of per employee water demand.	333
D.6	Model-predicted and actual values of per employee water demand.	334
D.6	Model-predicted and actual values of per employee water demand.	335
D.7	Weather stations in East-Central Illinois.	338
D.8	Self-supplied commercial and industrial water withdrawals in MGD for the baseline (BL) scenario for each county.	340
D.9	Self-supplied commercial and industrial water withdrawals in MGD for the less resource intensive (LRI) scenario for each county.	341
D.10	Self-supplied commercial and industrial water withdrawals in MGD for the more resource intensive (MRI) scenario for each county.	342
D.11	Historical values of dependent and independent variables for each study area. . . .	343
D.12	Historical values of dependent and independent variables for each study area. (continued)	344
D.13	Historical values of dependent and independent variables for each study area. (continued)	345
D.14	Historical values of dependent and independent variables for each study area. (continued)	346

D.15	Historical reported and modeled gallons per employee per day (GPED) for the commercial & industrial sector.	347
E.1	Total Agriculture and Irrigation withdrawals (MGD) for the baseline (BL) scenario for each county.	349
E.2	Total Agriculture and Irrigation withdrawals (MGD) for the less resource intensive (LRI) scenario for each county.	350
E.3	Total Agriculture and Irrigation withdrawals (MGD) for the more resource intensive (MRI) scenario for each county.	351
E.4	Irrigated cropland acreage for the baseline (BL) scenario for each county.	352
E.5	Irrigated cropland acreage for the less resource intensive (LRI) scenario for each county.	353
E.6	Irrigated cropland acreage for the more resource intensive (MRI) scenario for each county.	354
E.7	Total cropland withdrawals (MGD) for the baseline (BL) scenario for each county.	355
E.8	Total cropland withdrawals (MGD) for the less resource intensive (LRI) scenario for each county.	356
E.9	Total cropland withdrawals (MGD) for the more resource intensive (MRI) scenario for each county.	357
E.10	Golf course acreage for baseline (BL) scenario for each county.	358
E.11	Golf course acreage for less resource intensive (LRI) scenario for each county.	359
E.12	Golf course acreage for more resource intensive (MRI) scenario for each county.	360
E.13	Golf course water use (MGD) per day for baseline (BL) scenario for each county.	361
E.14	Golf course water use (MGD) for less resource intensive (LRI) scenario for each county.	362
E.15	Golf course water use (MGD) for more resource intensive (MRI) scenario for each county.	363
E.16	Beef cattle livestock for baseline (BL) scenario for each county.	364
E.17	Dairy cattle livestock for baseline (BL) scenario for each county.	365
E.18	Hog livestock for baseline (BL) scenario for each county.	366
E.19	Horse livestock for baseline (BL) scenario for each county.	367
E.20	Sheep livestock for baseline (BL) scenario for each county.	368
E.21	Chicken livestock for baseline (BL) scenario for each county.	369
E.22	Livestock water use in millions of gallons per day for baseline (BL) scenario for each county.	370

E.23	Total number of beef cattle, dairy cattle, hogs, horses, and sheep reported.	371
E.24	Total number of beef cattle, dairy cattle, hogs, horses, and sheep reported, continued.	372
E.25	Total number of beef cattle, dairy cattle, hogs, horses, and sheep reported, continued.	373
F.1	Effects of temperature increase on PWS by county (in MGD).	375
F.2	Effects of precipitation increase only on PWS by county.	376
F.3	Effects of precipitation decrease on PWS by county (in MGD).	377
F.4	Effects of temperature increase and precipitation increase on PWS by county (in MGD).	378
F.5	Effects of temperature increase and precipitation decrease on PWS by county (in MGD).	379
F.6	Effects of temperature increase on C&I by county (in MGD).	380
F.7	Effects of precipitation increase only on C&I by county.	381
F.8	Effects of precipitation decrease on C&I by county (in MGD).	382
F.9	Effects of temperature increase and precipitation increase on C&I by county (in MGD).	383
F.10	Effects of temperature increase and precipitation decrease on C&I by county (in MGD).	384
F.11	Effects of temperature increase on IR&AG by county (in MGD).	385
F.12	Effects of precipitation increase only on IR&AG by county.	386
F.13	Effects of precipitation decrease on IR&AG by county (in MGD).	387
F.14	Effects of temperature increase and precipitation increase on IR&AG by county (in MGD).	388
F.15	Effects of temperature increase and precipitation decrease on IR&AG by county (in MGD).	389
G.1	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the baseline scenario.	391
G.2	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the baseline scenario.	392
G.3	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the baseline scenario.	393
G.4	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the baseline scenario.	394

G.5	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the baseline scenario.	395
G.6	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the less resource intensive scenario.	396
G.7	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the less resource intensive scenario.	397
G.8	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the less resource intensive scenario.	398
G.9	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the less resource intensive scenario.	399
G.10	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the less resource intensive scenario.	400
G.11	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the more resource intensive scenario.	401
G.12	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the more resource intensive scenario.	402
G.13	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the more resource intensive scenario.	403
G.14	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the more resource intensive scenario.	404
G.15	Water withdrawals (MGD) for each county in East-Central Illinois by water demand sector for the more resource intensive scenario.	405

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Key Terms

2005 Normal 2005 model generated value using normal (1971-2000) weather data.

2005 Reported 2005 value reported from the original data source; not a modeled value.

2005 Weather 2005 model generated value using actual weather data from 2005.

Adjusted R^2 modification of R^2 that adjusts for the number of explanatory terms in a model.

Consumptive use water abstracted which is no longer available for use because it has evaporated, transpired, been incorporated into products and crops, or consumed by man or livestock.

Elasticity the degree to which a change in an explanatory variable changes water demand.

Estimate an approximate calculation.

Model generated value derived from the model.

Model residuals the differences between the responses observed at each combination values of the explanatory variables and the corresponding prediction of the response computed using the regression function.

N number of observations

Non-consumptive use water abstracted from a source, used for some purpose, and returned to the source for use by others downstream.

Probability of t-statistics gives the probability of obtaining the given t-ratio by chance. This means lower probability indicates higher statistical significance. Generally the value of 0.05 or lower is taken to indicate statistical significance.

R^2 measures the fraction of the total variability in the response that is accounted for by the model.

Root Mean Square Error (MSE) the distance, on average, of a data point from the fitted line, measured along a vertical line.

Scenario a specific set of assumptions used to estimate future water withdrawals.

t ratio the ratio of the standard error of the estimate of the regression coefficient divided by the value of the coefficient (representing the ratio of signal to noise). Low t-ratios indicate low statistical significance of the estimated regression coefficient. Generally values greater than 2 indicate statistical significance.

Water demand the volume of water required by users to satisfy their needs. In a simplified way it is often considered equal to water withdrawal, although conceptually the two terms do not have the same meaning.

Water use the water from a groundwater or surface water source that is consumed or used. This water is not returned to the source.

Water withdrawals the amount of water removed from a groundwater or surface water source.

Abbreviations and Units

Ave. Average

BL Baseline Scenario

C&I Commercial and Industrial Water Sector

CWLP Springfield City Water Light and Power

DCEO Illinois Department of Commerce and Economic Opportunity

EIA Energy Information Administration

EPA United States Environmental Protection Agency

ET Actual Evapotranspiration

GPCD Gallons Per Capita Per Day

GPED Gallons Per Employee Per Day

IDES Illinois Department of Employment Security

IDNR Illinois Department of Natural Resources

ISGS Illinois State Geological Survey

ISWS Illinois State Water Survey

IREIM Illinois Region Econometric Input/Output Model

IR&AG Irrigation and Agriculture Water Sector

IWIP Illinois Water Inventory Program

kWh kiloWatt Hour

LRI Less Resource Intensive Scenario

MGD Million Gallons Per Day

MRI More Resource Intensive Scenario

MWh MegaWatt Hour

PET Potential Evapotranspiration

PG Power Generation Sector

Precip. Precipitation

PWS Public Water Supply Water Sector

SIC Standard Industrial Code

Temp. Temperature

USGS United States Geological Survey

WHPA Wittman Hydro Planning Associates

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