GMA12
SOCIOECONOMIC IMPACTS CONSIDERATIONS

Presented
by

GMA 12 Consultant Team

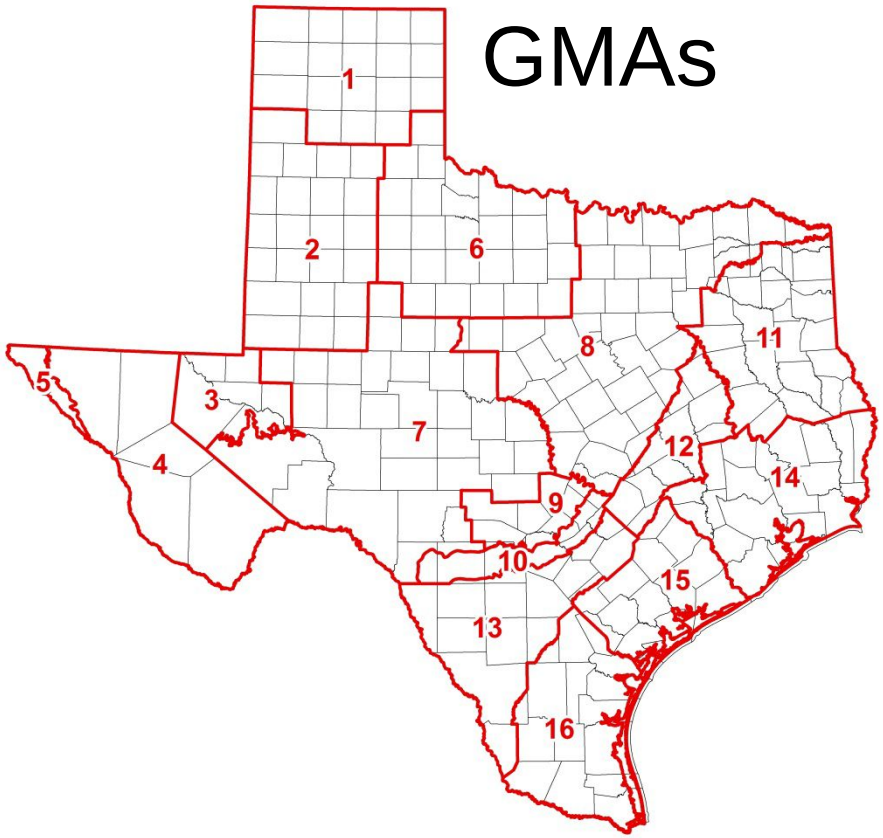
August 13, 2015

TWC Section 36.108 (d)

- Before voting on proposed desired future conditions . . . the district shall consider:
  - Aquifer uses and conditions
  - Needs and strategies
  - Hydrogeologic conditions
  - Environmental impacts
  - Subsidence
  - **Socioeconomic impacts**
  - Private Property rights
  - Feasibility
  - Anything else

Today's Consideration

- TWC Section 36.108 (d) (6) – socioeconomic impacts reasonably expected to occur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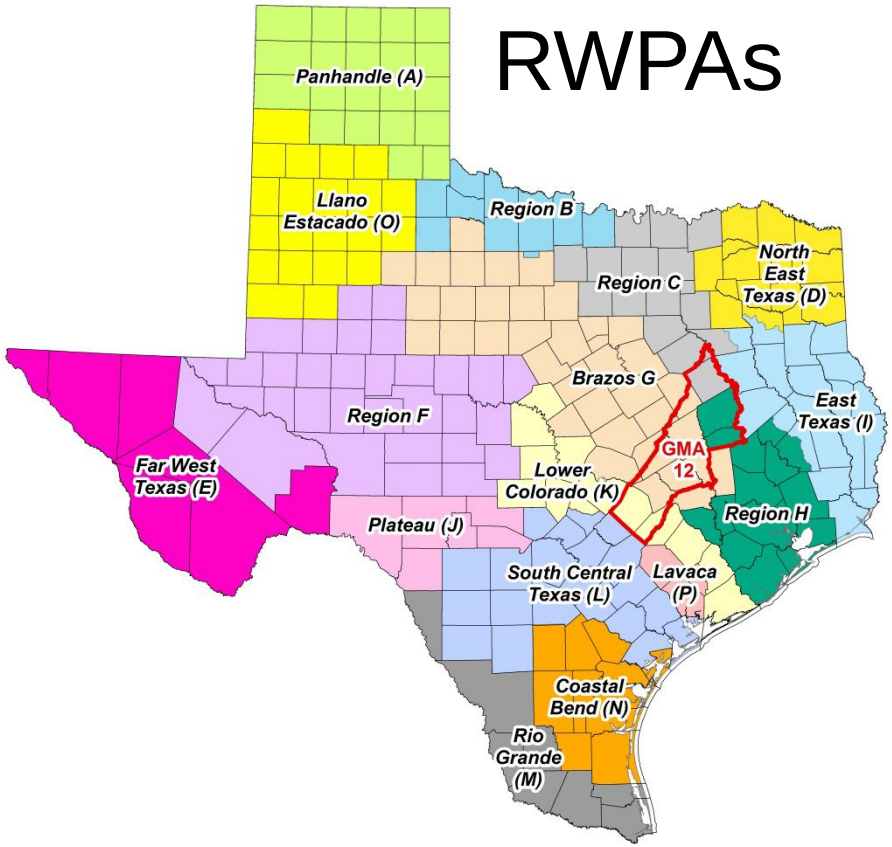

RWPAs
Panhandle (A)
Llano Estacado (O)
Region B
Region C
North East Texas (D)
Brazos G
East Texas (I)
Region F
GMA 12
Far West Texas (E)
Lower Colorado (K)
Region H
Plateau (J)
South Central Texas (L)
Lavaca (P)
Coastal Bend (N)
Rio Grande (M)

Socioeconomic Impacts and Water Planning in Texas – A Brief History

- Texas Water Code Chapter 16.051 (a) the board shall prepare, develop, formulate, and adopt a comprehensive state water plan that …shall provide for…further economic development (companion provision in TWC Chapter 16.053 (a, b) for regional water plans).
- Texas Administrative Code (TAC), Title 31, Chapter 357.7 (4)(A) states, *"The executive administrator shall provide available technical assistance to the regional water planning groups, upon request, on water supply and demand analysis, including methods to evaluate the social and economic impacts of not meeting needs."*

Socioeconomic Impacts and Water Planning in Texas – A Brief History (cont.)

- TAC, Title 31, Chapter 357.40 (a) RWPs shall include a quantitate description of the socioeconomic impacts of not meeting the identified water needs pursuant to §357.33 (c) of this title (relating to Needs Analysis: Comparison of Water Supplies and Demands).

Socioeconomic Impacts Analysis

- Executed by TWDB at request of RWPGs
- Uses water supply needs from Regional Water Plan
- Analysis attempts to measure the impacts in the event that water user groups do not meet their identified water supply needs associated with normal and drought conditions
- Multiple impacts examined
  - Sales, income and tax revenue
  - Jobs
  - Population
  - School enrollment
- Results of analysis are incorporated into final Regional Water Plan

Socioeconomic impact of not meeting water supply needs vs. impact of proposed desired future conditions

- Regional Water Planning (from TWDB)
  - Generate Input-Output Models combined with Social Accounting Models (IO/SAM) and develop economic baselines. Utilizes IMPLAN (Impact for Planning Analysis) software.
    - Economic baseline developed for counties, planning regions, and the state based on variables for 528 economic sectors as follows:

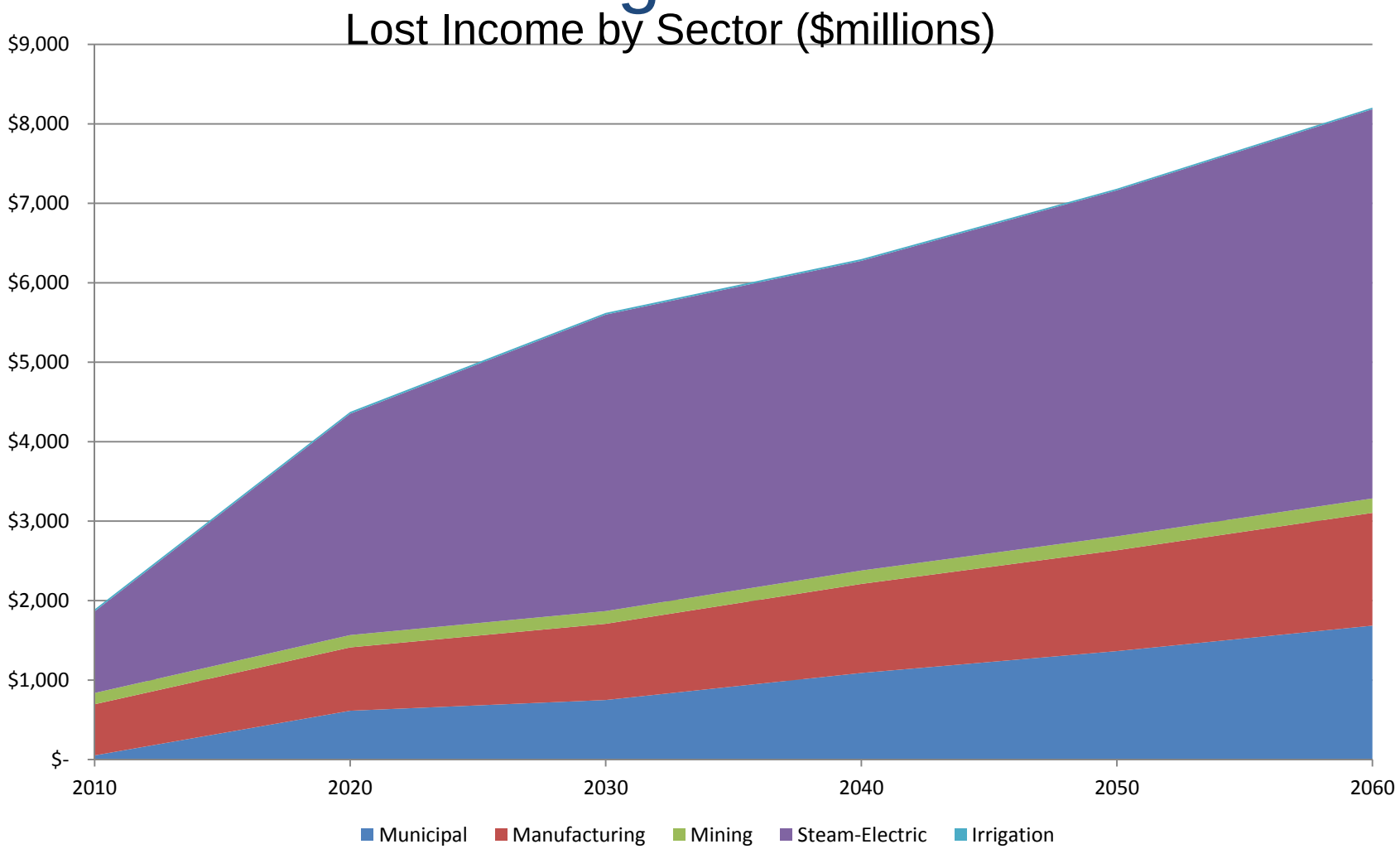
Socioeconomic impact of not meeting water supply needs vs. impact of proposed desired future conditions

- Output – total production of goods and services measured by gross sales revenues
- Final sales – sales to end user in Texas (a region) and exports out of region
- Employment – number of full and part-time jobs required by a given industry
- Regional income – total payroll cost paid by industries, corporate income, rental income, and interest payments
- Business taxes – sales, excise, fees, licenses and other taxes paid during normal operations

Socioeconomic impact of not meeting water supply needs vs. impact of proposed desired future conditions

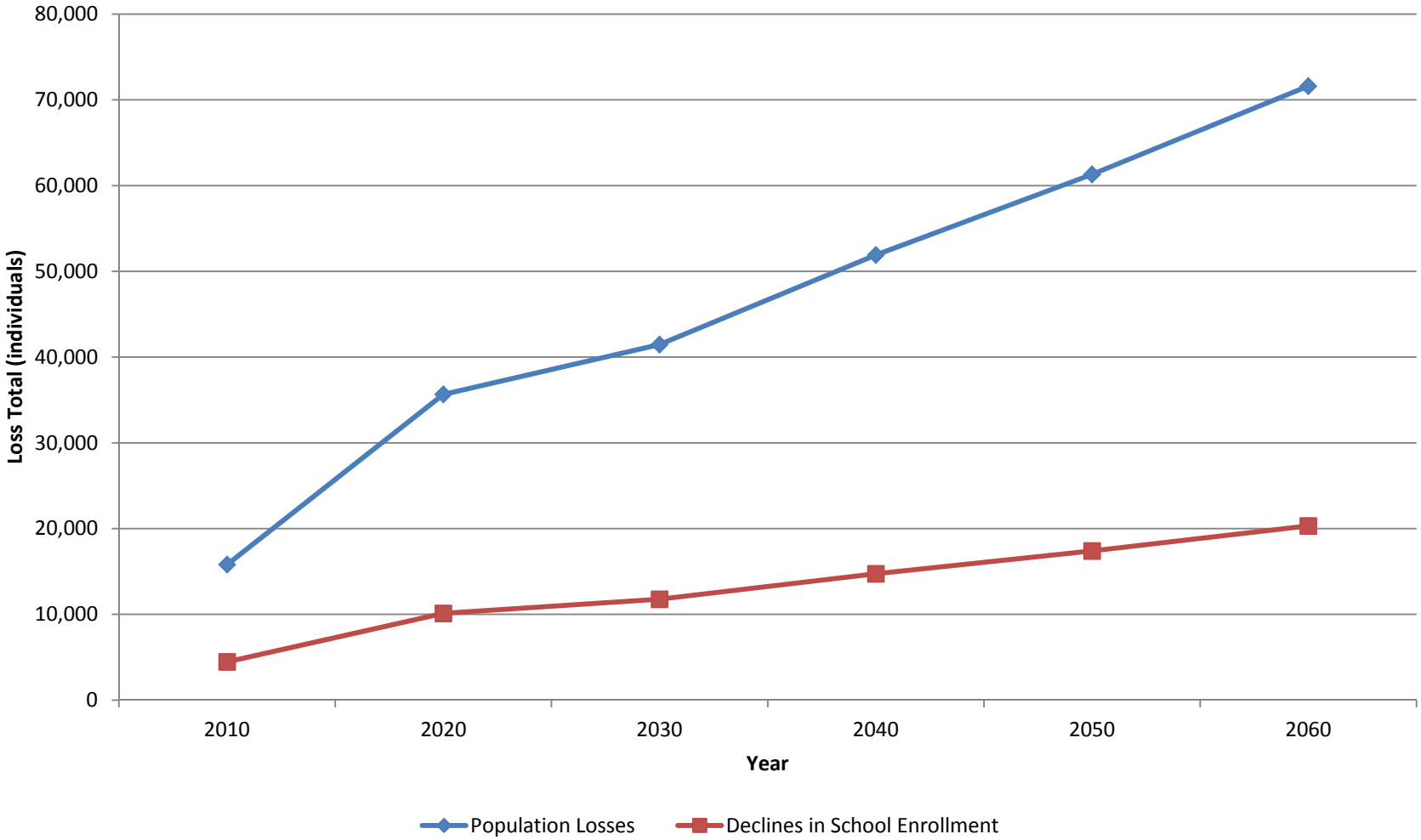
- Regional Water Planning (from TWDB – cont.)
  - Estimate direct and indirect impacts to business, industry and agriculture
  - Impact associated with domestic water usage
- While useful for planning purposes, socioeconomic impacts developed for regional water planning do not represent a benefit-cost analysis
- Analysis is executed for water user groups with needs for additional water supply.

Socioeconomic Impacts Analysis – 2011 Brazos G Regional Water Plan



For full analysis, see TWDB correspondence to Dale Spurgin from Stuart Norvell dated May 17, 2010, titled "Socioeconomic impact analysis of not meeting water needs for the 2011 Brazos G Regional Water Plan."

Social Impacts of Water Shortages in Region G



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Examples of Impacts by County for the Brazos G Regional Water Planning Area

BRAZOS COUNTY ($millions)	2010	2020	2030	2040	2050	2060
Bryan						
Monetary value of domestic water shortages	$0.00	$0.00	$0.00	$0.00	$0.00	$0.26
Lost utility revenues	$0.00	$0.00	$0.00	$0.00	$0.00	$0.62
College Station						
Monetary value of domestic water shortages	$0.00	$0.00	$0.06	$2.18	$5.41	$7.24
Lost utility revenues	$0.00	$0.00	$0.13	$4.22	$9.35	$11.15
Wickson Creek SUD						
Monetary value of domestic water shortages	$0.04	$2.05	$4.26	$12.26	$16.05	$20.69
Lost income from reduced commercial business activity	$0.00	$0.00	$0.00	$2.14	$3.17	$3.57
Lost jobs due to reduced commercial business activity	0	0	0	67	100	113
Lost state and local taxes from reduced commercial business activity	$0.00	$1.00	$0.00	$0.30	$0.45	$0.51
Lost utility revenues	$0.06	$0.70	$1.20	$1.64	$2.20	$2.39

For full analysis, see TWDB correspondence to Dale Spurgin from Stuart Norvell dated May 17, 2010, titled "Socioeconomic impact analysis of not meeting water needs for the 2011 Brazos G Regional Water Plan."

Examples of Impacts by County for the Brazos G Regional Water Planning Area (cont.)

MILAM COUNTY ($millions)	2010	2020	2030	2040	2050	2060
Bell Milam Falls WSC						
Monetary value of domestic water shortages	$0.02	$0.08	$0.17	$0.27	$1.06	$1.42
Lost utility revenues	$0.01	$0.10	$0.15	$0.19	$0.20	$0.22
Southwest Milam WSC						
Monetary value of domestic water shortages	$0.17	$0.55	$0.83	$0.93	$0.99	$4.19
Lost utility revenues	$0.28	$0.61	$0.81	$0.91	$0.96	$1.01
Steam-electric						
Lost income due to reduced electrical generation	$0.00	$0.00	$0.00	$0.00	$18.36	$18.36
Lost state and local business tax revenues due to reduced electrical generation	$0.00	$0.00	$0.00	$0.00	$2.63	$2.63
Lost jobs due to reduced electrical generation	0	0	0	0	62	62

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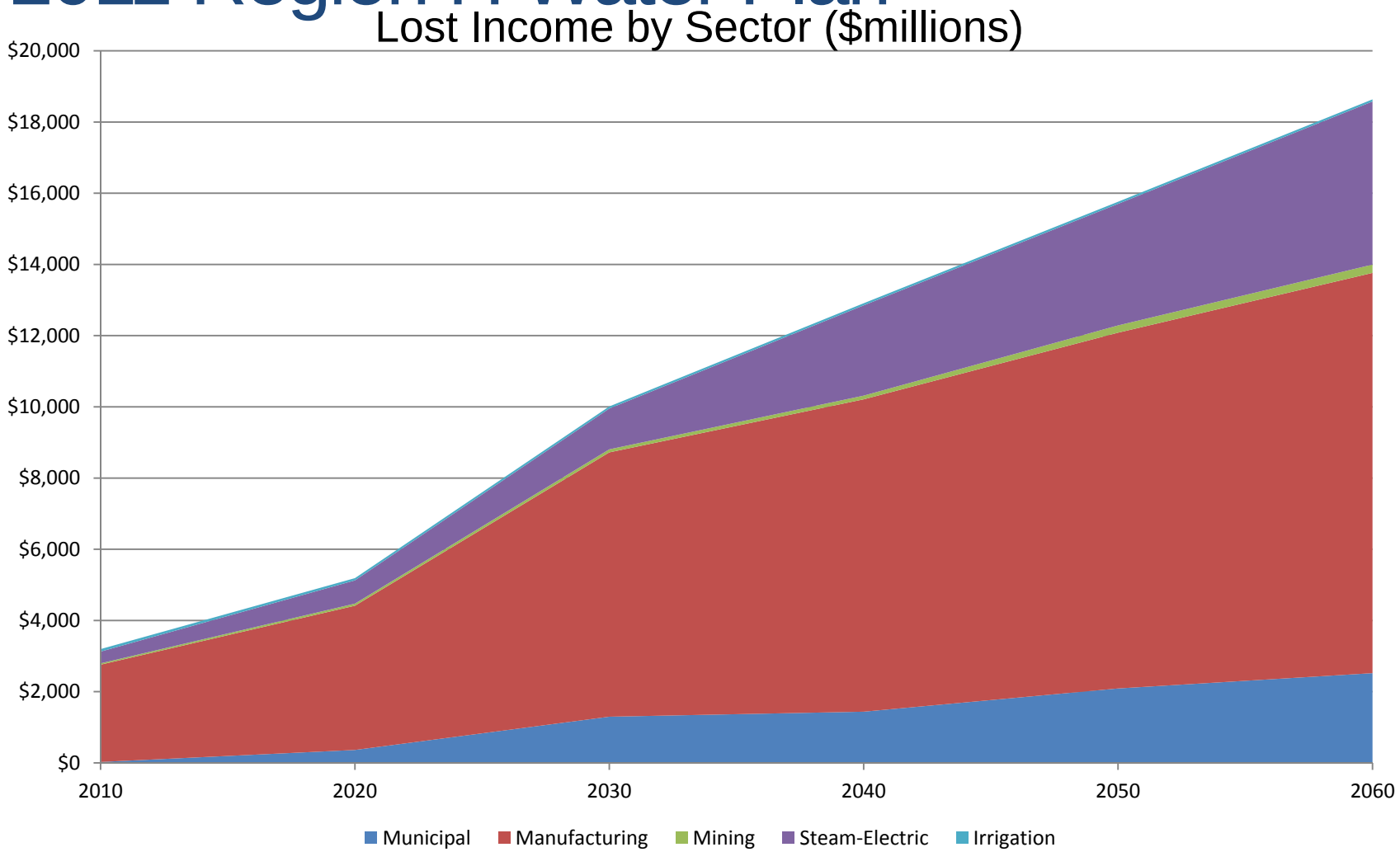
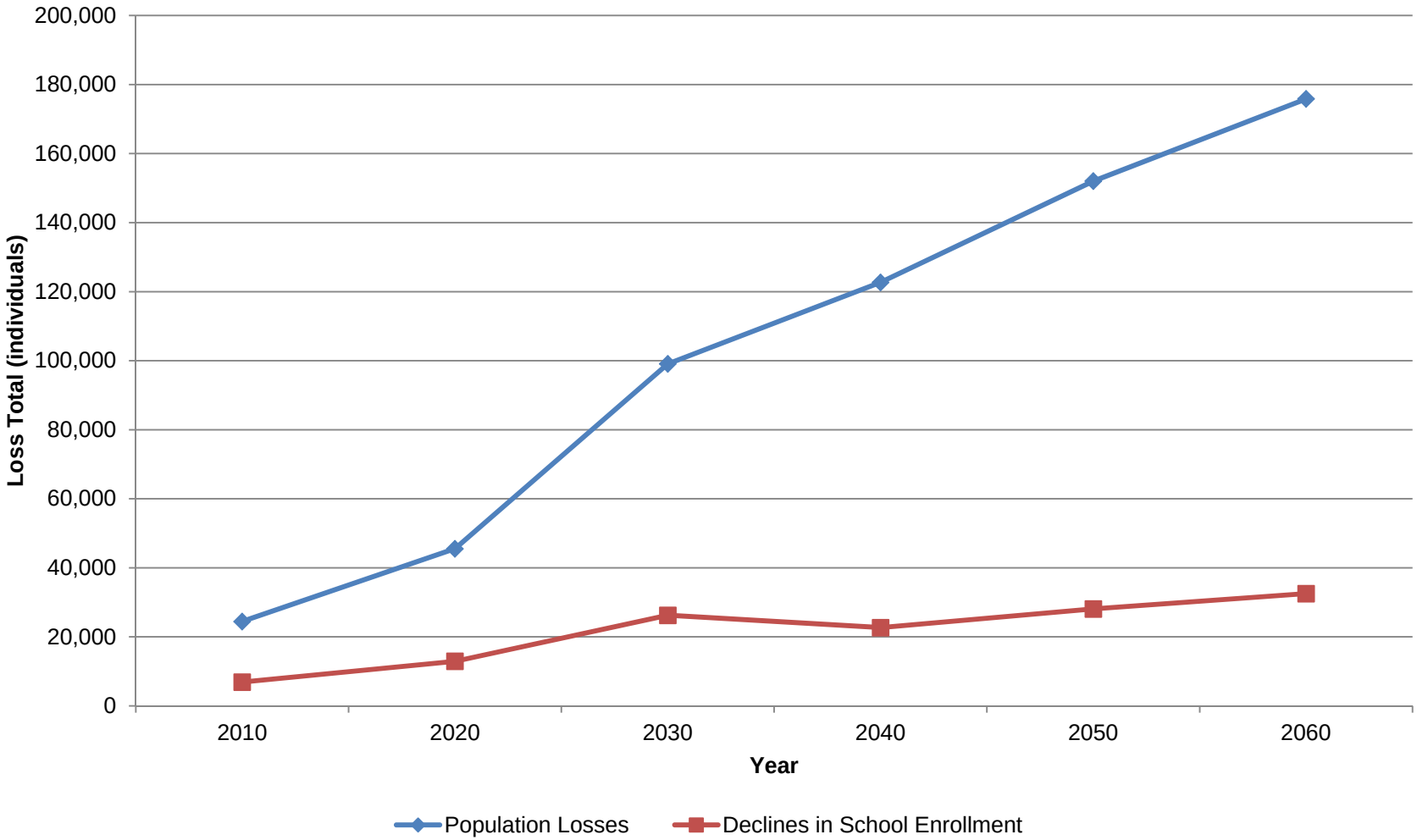
Socioeconomic Impacts Analysis – 2011 Region H Water Plan



For full analysis, see TWDB correspondence to the Honorable Mark Evans from Stuart Norvell dated May 19, 2010, titled "Socioeconomic impact analysis of not meeting water needs for the 2011 Region H Regional Water Plan."

Social Impacts of Water Shortages in Region H



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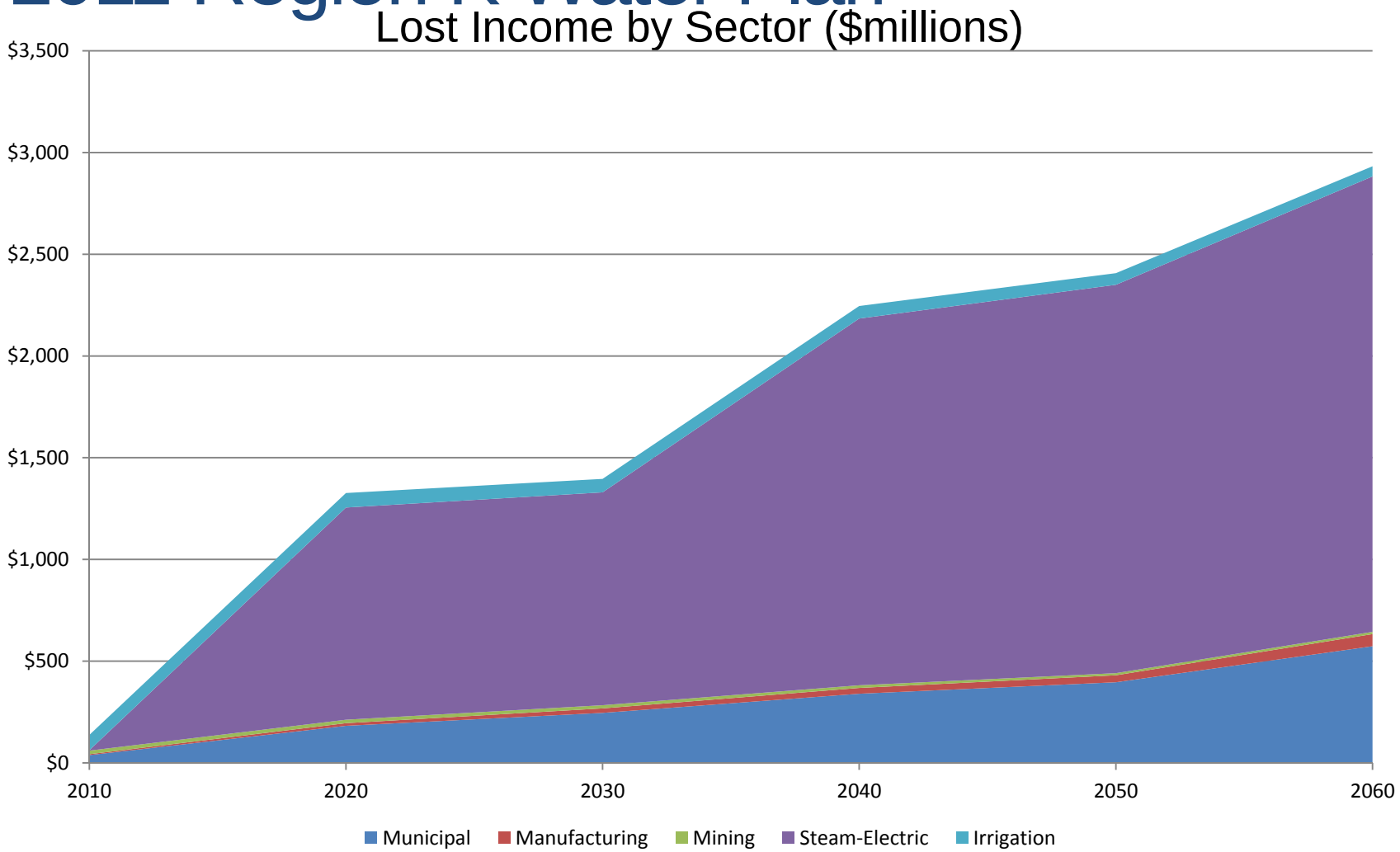
Examples of Impacts of Water Shortages in Municipal and Manufacturing Sectors in Region H

MUNICIPAL ($millions)	2010	2020	2030	2040	2050	2060
Leon County						
Monetary value of domestic water shortages	$0.00	$0.06	$0.07	$0.03	$0.01	$0.02
Madison County						
Monetary value of domestic water shortages	$0.00	$0.06	$0.12	$0.08	$0.11	$0.21

MANUFACTURING ($millions)	2010	2020	2030	2040	2050	2060
Leon County						
Reduced income from reduced manufacturing output	$0.00	$10.18	$20.12	$60.27	$78.40	$95.25
Reduced business taxes from reduced manufacturing output	$0.00	$0.62	$1.22	$3.66	$4.76	$5.78
Reduced jobs from reduced manufacturing output	0	51	101	304	395	480
Madison County						
Reduced income from reduced manufacturing activity	$0.00	$0.52	$1.00	$1.48	$1.91	$4.93
Reduced business taxes from reduced manufacturing activity	$0.00	$0.02	$0.04	$0.07	$0.09	$0.22
Reduced jobs from reduced manufacturing activity	0	6	12	18	23	59

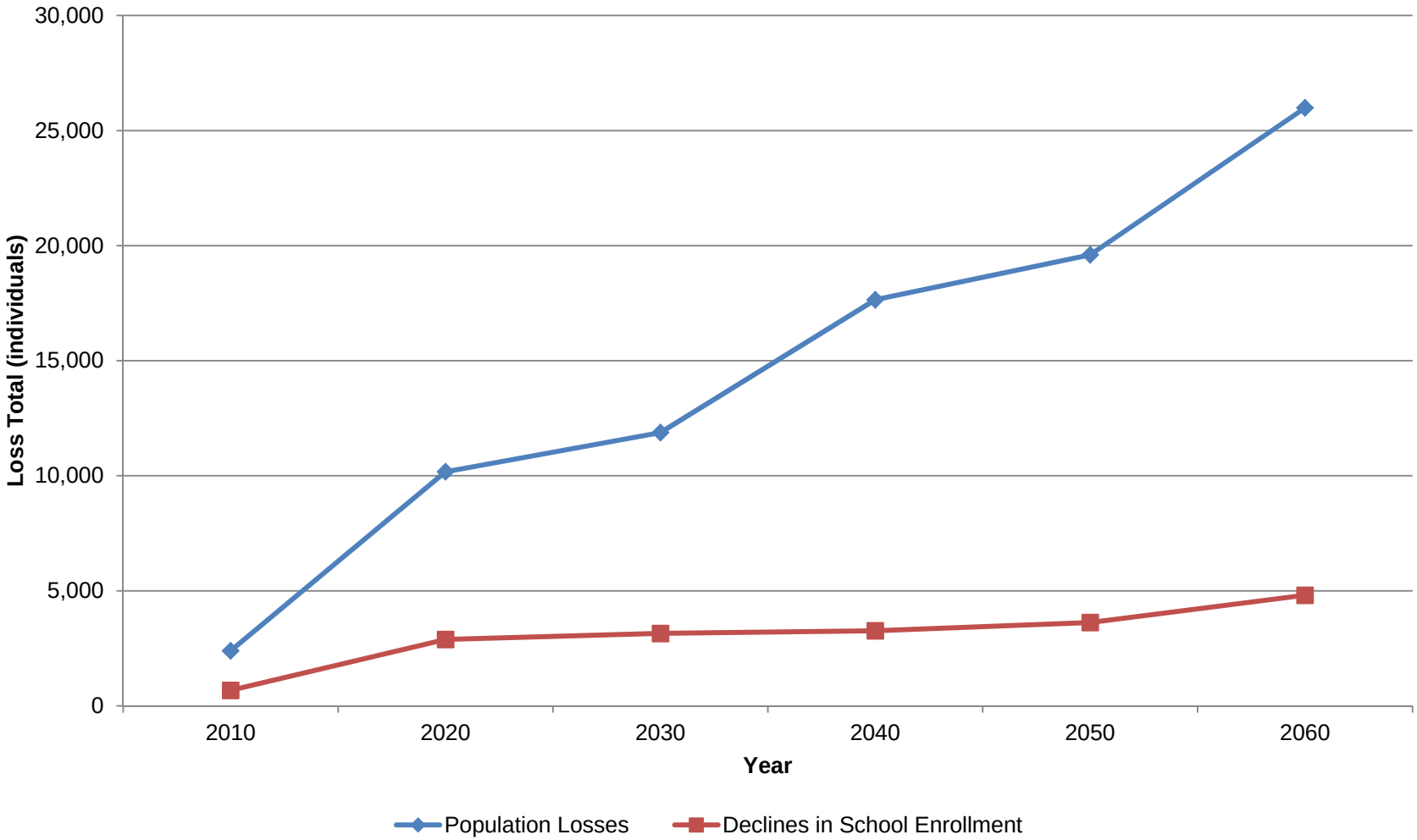
For full analysis, see TWDB correspondence to the Honorable Mark Evans from Stuart Norvell dated May 19, 2010, titled "Socioeconomic impact analysis of not meeting water needs for the 2011 Region H Regional Water Plan."

Socioeconomic Impacts Analysis – 2011 Region K Water Plan



For full analysis, see TWDB report by Stuart Novell dated May 2010, titled "Socioeconomic Impacts of Projected Water Shortages for the Lower Colorado Regional Water Planning Area (Region K)".

Social Impacts of Water Shortages in Region K



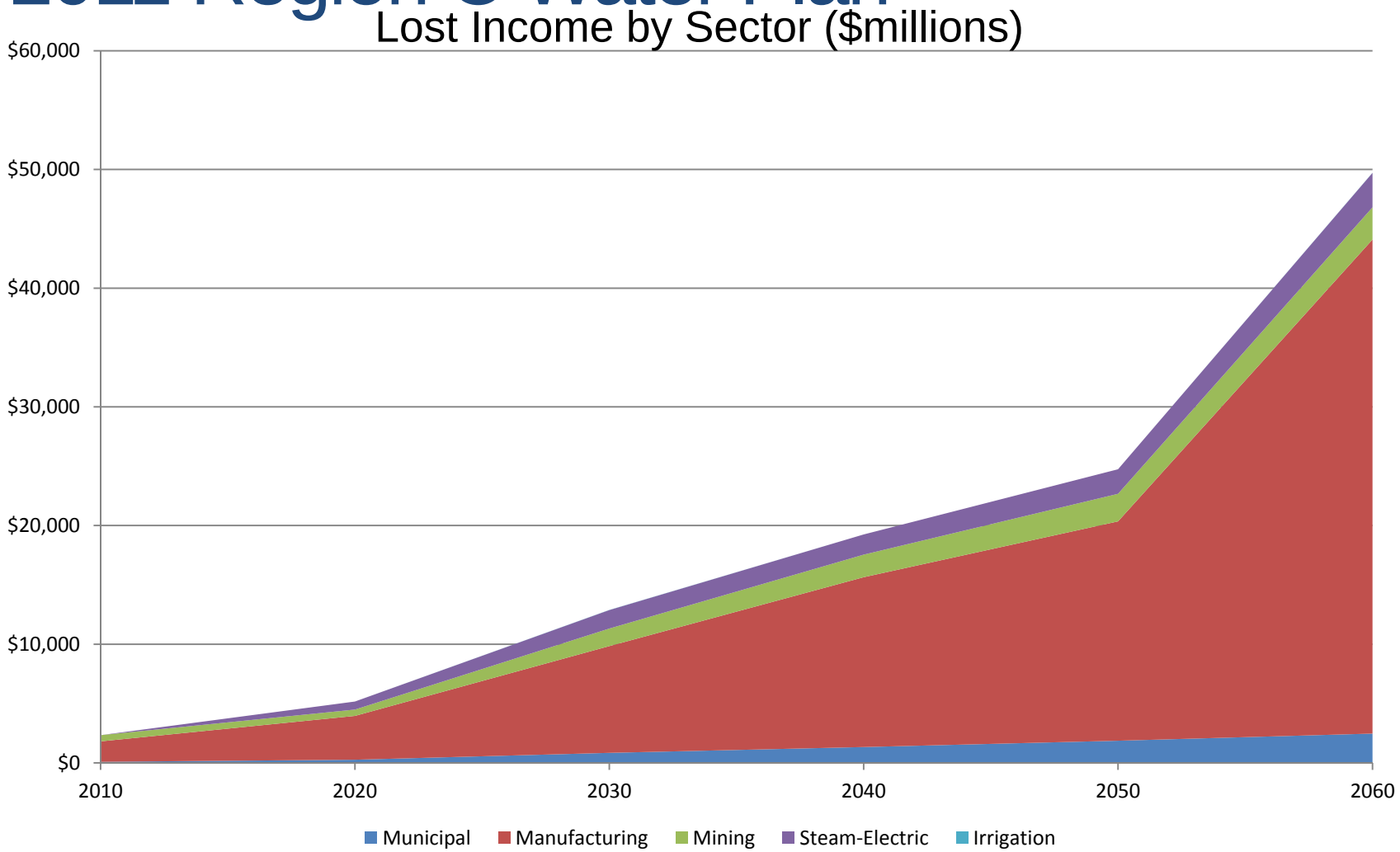
For full analysis, see TWDB report by Stuart Novell dated May 2010, titled "Socioeconomic Impacts of Projected Water Shortages for the Lower Colorado Regional Water Planning Area (Region K)".

Examples of Economic Impacts of Reduced Municipal Supply in Region K

($millions)	2010	2020	2030	2040	2050	2060
Aqua WSC						
Monetary value of domestic water shortages	$0.00	$0.00	$0.62	$26.11	$75.35	$142.24
Lost income from reduced commerical business activity	$0.00	$0.00	$0.00	$0.00	$0.00	$52.86
Lost jobs due to reduced commericial business activity	0	0	0	0	0	1176
Lost state and local taxes from reduced commercial business activity	$0.00	$0.00	$0.00	$0.00	$0.00	$5.63
Lost utility revenues	$0.00	$0.00	$1.10	$6.79	$11.39	$17.24
Austin						
Monetary value of domestic water shortages	$0.00	$0.00	$0.00	$0.00	$27.42	$69.83
Lost utility revenues	$0.00	$0.00	$0.00	$0.00	$46.14	$95.28
Barton Creek West						
Monetary value of domestic water shortages	$0.07	$0.07	$0.06	$0.05	$0.05	$0.05
Lost utility revenues	$0.10	$0.10	$0.09	$0.09	$0.09	$0.09
Bastrop						
Monetary value of domestic water shortages	$0.08	$0.50	$3.04	$4.26	$7.73	$13.76
Lost income from reduced commerical business activity	$0.00	$0.00	$0.00	$16.21	$24.16	$68.28
Lost jobs due to reduced commericial business activity	0	0	0	361	537	1519
Lost state and local taxes from reduced commercial business activity	$0.00	$0.00	$0.00	$1.72	$2.57	$7.27
Lost utility revenues	$0.12	$1.49	$2.81	$4.74	$6.33	$8.32
Bastrop County WCID #2						
Monetary value of domestic water shortages	$0.00	$0.00	$0.00	$0.00	$0.00	$0.18
Lost utility revenues	$0.00	$0.00	$0.00	$0.00	$0.00	$0.29
Bee Cave Village						
Monetary value of domestic water shortages	$19.27	$24.02	$28.74	$32.96	$36.04	$39.16
Lost income from reduced commerical business activity	$28.34	$36.37	$44.33	$51.44	$56.65	$61.92
Lost jobs due to reduced commericial business activity	457	586	715	829	913	998
Lost state and local taxes from reduced commercial business activity	$2.55	$3.27	$3.99	$4.63	$5.10	$5.57
Lost utility revenues	$1.85	$2.32	$2.78	$3.20	$3.50	$3.81

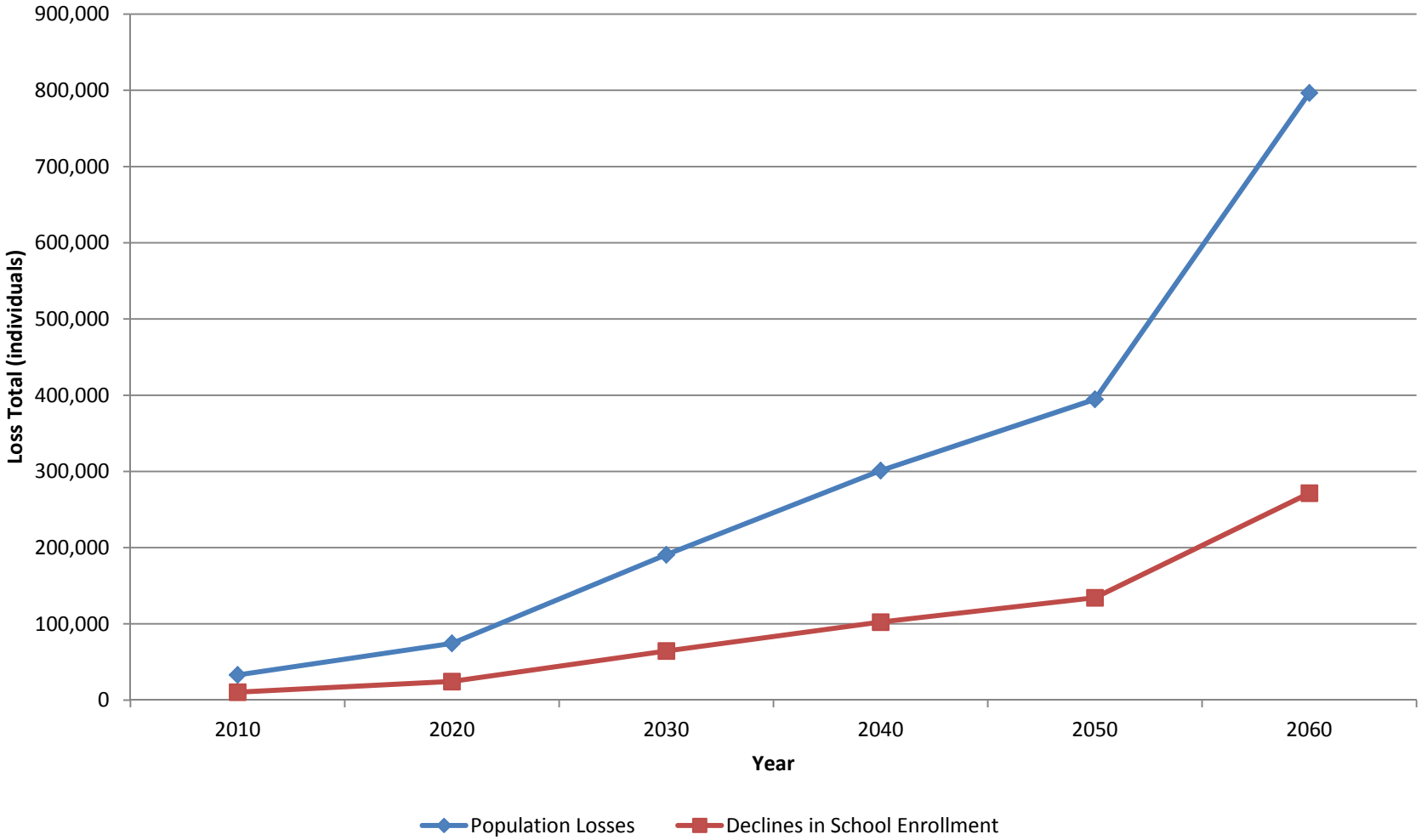
For full analysis, see TWDB report by Stuart Novell dated May 2010, titled "Socioeconomic Impacts of Projected Water Shortages for the Lower Colorado Regional Water Planning Area (Region K)".

Socioeconomic Impacts Analysis – 2011 Region C Water Plan



For full analysis, see TWDB report by Stuart Novell Revised September 1, 2010, titled "Economic Impacts of Projected Water Shortages for the Region C Regional Water Planning Area".

Social Impacts of Water Shortages in Region C



For full analysis, see TWDB report by Stuart Novell Revised September 1, 2010, titled "Economic Impacts of Projected Water Shortages for the Region C Regional Water Planning Area".

Examples of Economic Impacts of Reduced Steam-Electric & Municipal Supply in Region C

	2010	2020	2030	2040	2050	2060
Steam-Electric ($millions) Freestone County						
Reduced income from reduced electrical generation	$0.00	$0.00	$0.00	$0.00	$64.62	$187.54
Reduced business taxes from reduced electrical generation	$0.00	$0.00	$0.00	$0.00	$9.28	$26.92
Reduced jobs due to reduced electrical generation	0	0	0	0	220	638
Municipal ($millions) Fairfield						
Monetary value of domestic water shortages	$0.00	$0.00	$0.00	$0.01	$0.21	$0.47
Lost utility revenues	$0.00	$0.00	$0.00	$0.02	$0.47	$0.83

For full analysis, see TWDB report by Stuart Novell Revised September 1, 2010, titled "Economic Impacts of Projected Water Shortages for the Region C Regional Water Planning Area".

Potential Socioeconomic Impact of Proposed DFCs

During the first round of joint-planning (2005-2010), the TWDB adopted rules to describe what is to be considered in the petition process. With the passage of Senate Bill 660 in 2011, these rules were repealed.

Potential Socioeconomic Impact of Proposed DFCs (cont.)

- TWC Chapter 36.108(d) and (d)(6) states, “the districts shall consider groundwater availability models and other data or information for the management area and shall propose for adoption desired future conditions for the relevant aquifers within the management area. Before voting on the proposed desired future conditions of the aquifers…the districts shall consider **socioeconomic impacts reasonably expected to occur**;”
- Proposed DFCs are quantitative descriptions of specific times (decadal) of groundwater resources in a management area.
- This requirement was added to the requirements of joint planning with the passage of Senate Bill 660 in 2011.

Potential Socioeconomic Impact of Proposed DFCs (cont.)

- From a qualitative perspective, both positive and negative socioeconomic impacts may potentially result from implementation of proposed DFCs.
  - Proposed DFCs may require conversion of part or all of a supply to an alternative supply or supplies, which may have increased costs associated with infrastructure, operation and maintenance.
  - Proposed DFCs may reduce/ eliminate the costs of lowering pumps and either constructing or deepening wells.
  - Proposed DFCs should help ensure a long-term supply for an area.

Potential Socioeconomic Impact of Proposed DFCs (cont.)

- Proposed DFCs may serve to sustain/enhance economic growth due to assurances provided by an adequate and/or diversified water portfolio.
- Alternative to proposed DFCs may result in short-term reduction in utility rates due to reduction in cost of water management strategy implementation.
- Alternatives to proposed DFCs may result in significant but unquantified production costs due to transition from confined to unconfined conditions in part of aquifer or continuing lower water levels in wells.
- Alternative to proposed DFCs may result in a reduced groundwater supply being available on a long-term basis.


Questions
Thank you!