City of Gardner Electric Utility
Integrated Resource Plan (IRP)
Initial 5-Year Plan
2014

(Approved and Accepted by Resolution No. 1909
Adopted on August 18, 2014)

EPAMP Overview

The Energy Planning and Management Program (EPAMP) is defined in the Code of Federal Regulations in Title 10, Part 905 (10 CFR 905). The purposes of EPAMP are to meet the objectives of the Energy Policy Act of 1992 (EPAct) while supporting integrated resource planning; demand-side management, including energy efficiency, conservation, and load management; and the use of renewable energy.

EPAMP was initially published in the Federal Register at 60 FR 54714 on October 20, 1995, and revised in 65 FR 16795 on March 30, 2000, and 73 FR 35062 on June 20, 2008. 10 CFR § 905.11 defines what must be included in an IRP.

Western's Energy Services Web site (www.wapa.gov/es/irp) provides extensive information on integrated resource planning and reporting requirements. If you have questions or require assistance in preparing your IPR, contact your Western regional Energy Services representative.

IRP Content

Cover Page..... Customer Name & Contact Information
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INTEGRATED RESOURCE PLAN (IRP)
5-Year Plan

Customer Name:
Gardner, Kansas

IRP History: Check one as applicable.	
X	**This is the submitter's first IRP submittal.**
	This submittal is an update/revision to a previously submitted IRP.

Reporting Dates:	
IRP Due Date:	4/1/2014
Annual Progress Report Due Date:	4/1

Customer Contact Information: Provide contact information for your organization. The contact person should be able to answer questions concerning the IRP.	
Customer Name:	Gardner, Kansas
Address:	1150 E. Santa Fe
City, State, Zip:	Gardner, Kansas, 66030
Contact Person:	Open
Title:	Electric Director
Phone Number:	913-856-7256
E-Mail Address:	
Website:	www.gardnerkansas.gov

Type of Customer: Check one as applicable.	
X	**Municipal Utility**
	Electric Cooperative
	Federal Entity
	State Entity
	Tribal
	Irrigation District
	Water District
	Other (Specify):

SECTION 1	UTILITY/CUSTOMER OVERVIEW

Customer Profile:
Enter the following data for the most recently completed annual reporting period. Data may be available on form EIA-861, which your submit to the U.S. Energy Information Administration (EIA).

Reporting Period	
Reporting Period Start Date (mm/dd/yyyy)	01/01/2013
Reporting Period End Date (mm/dd/yyyy)	12/31/2013
Energy Sales & Usage	
Energy sales to Ultimate End Customers (MWh)	129,350.4
Energy sales for Resale (MWh)	0
Energy Furnished Without Charge (MWh)	0
Energy Consumed by Respondent Without Charge (MWh)	560.4
Total Energy Losses (MWh entered as positive number)	9,938.1
Total Energy Usage (sum of previous 5 lines in MWh)	139,848.9
Peak Demand (Reporting Period)	
Highest Hourly Summer (Jun. – Sept.) Peak Demand (MW)	36.4MW
Highest Hourly Winter (Dec. – Mar.) Peak Demand (MW)	24.1 MW
Date of Highest Hourly Peak Demand (mm/dd/yyyy)	09/18/2013
Hour of Highest Hourly Peak Demand (hh AM/PM)	6:00 pm
Peak Demand (Historical)	
All-Time Highest Hourly System Peak Demand (MW)	38.4 MW
Date of All-Time Hourly System Peak Demand (mm/dd/yyyy)	08/02/11
Hour of All-Time Hourly Peak System Demand (hh AM/PM)	6:00 PM
Number of Customers/Meters (Year End of Reporting Period)	
Number of Residential Customers	7230
Number of Commercial Customers	373
Number of Industrial Customers	0
Other (Specify): **City of Gardner**	1
Other (Specify): **School District - #231**	16
Other (Specify):	
Other (Specify):	
Other (Specify):	

Section 1 – Utility/Customer Overview, description of the City of Gardner, Kansas' customer service territory, services provided, key customers and significant loads, peak demand drivers, competitive situation and any unique aspects about the City's service territory. What future challenges could impact the utility's resource needs such as population changes, customer growth/losses and any industrial developments.

Gardner is named in honor of Governor Gardner of Massachusetts. It is also known as "where the Trails Divide". Craig Crease, President, of the Kansas City Area Historic Trails Association wrote the following regarding the significance of Gardner Junction: The singularly unique and historic junction of America's three great western frontier trails... the Santa Fe Trail... the Oregon Trail... and the California Trail... is located two miles southwest of present day Gardner, Kansas. It stands unique as the eye of the needle through which hundreds of thousands of people, from 1827 to the twilight of the Civil War in 1865, came to and through this particular "fork in the road" on their way to pursuing their destinies in the West. The junction offered two auspicious routes: to the left lay the Santa Fe Trail, meandering on southwest through the plains... the right was the Oregon Trail, bearing due west for a few miles before it turned north toward the Kansas River valley.

100 years ago, in the news, on June 29, 1914, the following discussion about the Gardner Electric Light Co (Gardner Electric Utility) highlight the history of the utility;

> Both the Gardner Electric Light Co, and the Gardner Gas, Fuel & Light Co., are working on propositions which will be taken up tomorrow evening by the Board of Selectmen and probably definite action will be taken in regard to street illumination.
> The electric light company has already submitted a proposition which would mean more lights and a reduction in rate, and the gas company has also given assurance that it will make a suggestion which will be for the interest of the town.
> The officials of the town and the companies have discussed the matter at the meetings of the Selectmen, and the spirit of cooperation which has been shown would indicate that satisfactory arrangements for all parties will result.

The City of Gardner, Kansas (City) is located in Johnson County, Kansas approximately 40 miles from downtown Kansas City, Missouri. In 2013, the City operated an electric utility that provided service to a population of approximately 19,000 citizens or 7,400 electric customers. Electric sales revenue totaled over $13 million. The City's service territory is surrounded by the Kansas City Power & Light Company (KCPL). Any expansion of the City's electric service territory, through annexation, will require extensive negotiations and the purchase of KCPL's utility assets. Situated adjacent to the City of Gardner is BNSF's new Logistics Park of KC and Intermodal Facility (LPKC). This 1,000-acre development will contain a 440-acre intermodal facility and 560-acre logistics park. Both facilities are in Edgerton, Kansas but are adjacent to Gardner's city limits. Therefore, growth in residential housing and some warehousing will occur over the next 20 years. The link below takes you to a video on the BNSF project.

https://vimeo.com/76882914

The City forecasts demand and energy growth of 1% over the next five years. The City uses a trending formula based on the previous five year peak demands. However, if the build-out of the logistics park occurs faster than anticipated, demand and energy growth could increase more than forecasted. The 2010 census population was 19,123 residents, 6,644 households, and 4,938 families residing in the city. The population density was 1,890 inhabitants per square mile. There were 7,300 housing units at an average density of 721 per square mile. The homeownership rate was 73.9%. Per capita money income in 2012 was $25,630 with median household income of $64,566. There were 3.9% of persons living below the poverty line. The table below shows the historical census population and estimated 2015 and 2020 population.

Attachment 1 to Section 1 is the electric service territory for the City of Gardner's electric utility department.

Census	Population	% Change
1940	510	–
1950	676	32.5%
1960	1,619	139.5%
1970	1,839	13.6%
1980	2,392	30.1%
1990	3,191	33.4%
2000	9,396	194.5%
2010	19,123	103.5%
2015 (Est.)	20,935	9.5%
2020 (Est.)	22,674	8.3%

The electric utility has 21 full-time equivalent employee positions. They are;

Administration:
Electric Division Manager
Executive Assistant
Management Analyst

Production:
Electric Operations Supervisor
Electric Engineer Tech
Lead Elec. Operator
Apprentice Plant Operator
Electric Engineer

Distribution:
Electric Distribution Supervisor
Administrative Assistant
Lead Lineman
Lead Lineman
Journeyman Lineman
Journeyman Lineman
Journeyman Lineman
Journeyman Lineman
Meter man/Lineman
Meter man/Lineman
Maintenance Worker
Maintenance Worker II
Electric Meter Tester

Section 2 – Load Forecast provides a forecast summary for the next ten (10) years. As previously mentioned, the City uses a trending formula based on the previous five (5) year peak demands. The historical demand and energy use mirror the growth in population. The following table shows the last ten years growth in peak demand and energy.

Reporting Year	Peak Demand (MW)	Total Energy (MWh)
2004	25.1	94,755
2005	28.0	103,712
2006	31.6	116,275
2007	32.8	126,158
2008	33.9	126,225
2009	34.7	124,022
2010	36.9	137,067
2011	38.4	136,397
2012	38.3	137,619
2013	36.4	139,849

Load Forecast:

Reporting Year	Peak Demand (MW)	Total Energy (MWh)
2014	36.8	141,381
2015	37.1	142,796
2016	37.5	144,223
2017	37.9	145,665
2018	38.3	147,123
2019	38.6	148,596
2020	39.	150,080
2021	39.4	151,580
2022	39.8	153,095
2023	40.2	154,625

Section 3 – Existing supply-side resource summary including any conventional resources, renewable generation, and purchase power contracts (including Western Area Power Administration contracts). Describe the general operation of these resources and any issues, challenges, or expected changes to these resources in the next five (5) years.

The City is a member of the Kansas Municipal Energy Agency (KMEA), the Kansas Municipal Utilities (KMU), and the American Public Power Association (APPA). The City is a founding member of KMEA's Energy Management Project No. 1 (EMP1). EMP1 consists of five (5) eastern Kansas public power systems directly interconnected with KCPL. The cities pool their resources to gain maximum benefit.

In 2013 the City purchased over 99% of its energy needs as follows;

Supply-side Resource	Percentage of Total	MWhs
Grand River Dam Authority	46.81%	65,514
Western Area Power Admin.	1.63%	2,278
KMEA – EMP1	12.37%	17,310
Omaha Public Power District	39.11%	54,747
Internal Generation	0.08%	116

Existing Generation Resources:

Resource Description	Fuel Source	Rated Capacity (MW)	In-Service Date	Estimated Retirement Date
GE CT	Gas	13.5	1990	2040
GE CT	Gas	13.5	1990	2040

Existing Purchase Power Resources:

Resource Description	Fuel Source	Contracted Demand (MW)	Type of Service	Expiration Date (Year)
GRDA	Coal	9.0	Firm	04/20/2026
OPPD	System	10.0 – 20.0	Firm	12/31/2018
Western	Hydro	.7	Firm	9/30/2024
KCPL (EMP1)	Variable	Load Following	Firm	2015
EMP 1 Marketing	SPP EIS / IM	Variable	Market Sale/Purchase	Indefinite

The City does not have a net metering program. Currently, the City is participating in a power supply study with KMEA members. (See Section 5 – Attachment 1) The purpose of the study is to find a supply

resource to replace the loss of the OPPD resource and forecasted growth in peak demand. The City has requested 10 MWs of intermediate resource and 2 MWs of wind resource be study. It is anticipated the KMEA managed study will be completed by the end of 2014.

Beginning March, 2014, the Southwest Power Pool (SPP) began operating the wholesale Integrated Marketplace (IM). This market provides all of the energy needs within SPP. The participants in the IM deposit their energy resources into the IM and take out their energy needs at nodes where the price difference, called Locational Marginal Price (LMP) reflects the cost effectiveness in delivering energy to the load center, i.e. City of Gardner, Kansas. As a result of the City participating in the IM, the composition of the generating resources SPP has on-line will reflect the composition of the energy the City is receiving from the IM. For example, during the spring of 2014, wind generation within the SPP footprint increased from 8% in the spring of 2012 to 15% in 2014.

Section 4 – Existing Demand-side resources (DSM) alter a customer's energy use. Provide current demand-side programs, including energy conservation, energy efficiency, load control/management, energy use education, maintenance plans and distribution system upgrades. Demand-side programs may impact the utility distribution system, city owned facilities, and/or end-user energy consumption.

SUMMARY TABLE OF RECOMMENDED ENERGY EFFICIENCY MEASURES (EEMS) (Burns & McDonnell)

In 2011, the City retained Burns & McDonnell to provide an Investment Grade Audit of the City's facilities and develop the scope of work and energy savings calculations for each of the recommended energy efficiency measures. The following table provides a detailed account of the recommended upgrade opportunities. Each opportunity is described and includes installed costs and calculated annual savings for each of the items. Note that kWh savings are electrical savings and MMBtu savings are natural gas savings. Because of budget constraints, the City has deferred some of the recommendations and implemented those that City staff could include in the annual facilities budgeting process.

			COSTS	ANNUAL SAVINGS			
EEM Number	EEM Description		Total Installed Costs	kWh		Dollars	Simple Payback
	Utility Analysis						
1	Electric Rate Conversion to All-Electric KCPL Rate		-	-		**19,757**	0.0
	Mechanical						
2	VAV Box Replacements and New BAS	City Hall	**246,894**	237,244	0	**17,793**	13.9
3	Burn Waste Oil with New Heater - Line	Public	**15,295**	23,520	0	**1,764**	8.7
4	Gas-Fired Infrared Heaters for Garage Areas	Public	**25,760**	45,000	0	**3,375**	7.6
5	Raw Intake Pumps VFD Installation	Hillsdale	**139,443**	215,311	0	**14,361**	9.7
6	High Service Pumps VFD Installation	Hillsdale	**37,674**	69,430	0	**4,631**	8.1
7	Heat Pump Heaters to replace Elec Convection	Hillsdale	**123,165**	214,543	0	**14,310**	8.6
8	Split-System Re-Commissioning and Insulation	Hillsdale	**8,050**	1,000	0	**67**	120.7
9	Garage Bldg Wall Insulation (Wall Panels)	KillCreek	**20,241**	20,720	0	**1,786**	11.3
10	Garage Bldg Heater Replacement (NG Radiant,	KillCreek	**17,011**	78,219	-284	**4,616**	3.7
11	UV Bldg Heater Replacement (NG, RA)	KillCreek	**60,274**	116,248	-384	**7,138**	8.4
12	Sluge-Dry Bldg Decommissioning	KillCreek	**321,372**	89,367	0	**7,703**	41.7
13	Heating Retrofit for North and South Lift	Lift Stations	**8,050**	45,089	0	**3,887**	2.1
14	Fiberoptics from Celebration Park to Kill Creek	KillCreek	**13,524**	0	0	**1,200**	11.3
15	Fee to ATMOS for gas line service / meter hook	KillCreek	**20,930**	0	0	-	
	Lighting (including exterior)						
16	All Facilities	All Facilities	**184,086**	264,859	0	**20,360**	9.0

Program Description	Estimated Program Savings (MW and/or MWh, if known)
LED Street Light Program	Unknown at this time
2011 Take Charge Challenge	$25,000 grant from Efficiency Kansas & Johnson County
Home Energy Audits	
Free Weatherization Kits	
Free Programmable Thermostat	
Distribution Upgrades	Unknown at this time
Renewable Rate Ordinance	Currently two commercial customers – minimal energy savings

The Electric Power Research Institute (EPRI) developed six industry accepted load shape objectives. Load shape objectives change a customer's energy use pattern through voluntary and mandatory utility programs. These objectives can be summarized as;

1. Strategic Load Growth - promoting increase in loads of any kind
2. Peak Clipping - reduction in the system peak demand
3. Strategic Conservation - reducing end-use consumption
4. Valley Filling - promote increasing off-peak loads
5. Load Shifting - moving loads from peak to off-peak periods
6. Flexible Load Shape - modify the load shape through calls to reduce loads

The City's DSM programs should be designed to satisfy one or several of the above objectives.

Section 5 – Future Resource Requirements and Resource Options: Provide a brief description of the new resources that are required to provide Gardner's retail customers with adequate and reliable electric service over the next five (5) year resource planning period. Discuss the replacement of the OPPD supply-side resource and the introduction of demand-side programs into the integrated resource plan.

Attachment 1 to Section 5 contains the City's System Capacity Responsibility (SCR) analysis, forecasted demand schedule and forecasted energy, for the period 2004 through 2030. In addition, the analysis shows four growth rate scenarios, a ten year rate, a five year rate, a rate weighted 25% on the ten rate and 75% on the five year rate and finally a growth rate weighted 75% of the five year rate. For planning purposes the City has selected the non-weighted five year historical growth rate.

Also contained in Attachment 1 to Section 5 is KMEA's analysis of Gardner's forecasted power supply needs. Table 1 contains the City's annual peak demand and energy requirements through 2030. Table 2 summarizes the City's existing and committed power supply resources. Table 3 highlights the City's capacity surplus and/or deficiency.

Figure 1 in Attachment 1 to Section 5 captures the City's existing capacity resource needs graphically. Figure 2 reflects the City's 2013 energy supply in MWhs. Figure 3a is a load duration curve for 2013. It reflects the City's existing resource needs by type of resource. Figure 3b is another load duration curve except it is for the year 2019. This curve shows the need for both base-load and intermediate supply resources in 2019.

KMEA's Figure 7 is a suggested capacity resource plan over the study period. The City's supply-side resources would come from a portfolio of KMEA managed resources that includes both base-load and intermediate resources. Figure 8 shows the 2019 suggested energy mix.

Section 5 (Continued) – Future Supply-side Options that are being considered and evaluated include conventional generation, renewable generation, and power purchase contracts.

The City is currently participating in KMEA's power supply study. The results of that study will not be known until January, 2015. However, the City has directed KMEA to study 10 MWs of intermediate resources starting in 2019 with a 5 to 7 year time frame and 2 MWs of wind generation starting in 2018, under a 20 year purchase power contract.

The City's GRDA purchase power contract runs through April, 2026. Presently, KMEA is reviewing with GRDA the possibility of renewing that purchase power contract. However, if the GRDA contract is not renewed in 2026, then, the City will need to obtain 20 to 25 MWs of new supply-side resources.

Supply-side Option	Applicability for Implementation or Further Consideration
KMEA – EMP 1	The City's participation in EMP 1 allows the most cost effective resources to be dispatched to meet its' loads, then, make available any excess resources to the Southwest Power Administration's (SPP) integrated marketplace.
Intermediate	Currently working with KMEA power supply committee
Wind	Currently working with KMEA power supply committee

Future Demand-side (DSM) Options being considered and evaluated include customer energy use education, energy efficiency measures, distribution system upgrades to improve the delivery of energy, and the possibility of load control/management of residential and commercial air-conditioners.

Outlined in Section 8 – Action Plan, the City historically focused only on the need for supply-side resources to meet capacity requirements. Moving away from what the City currently does to the goal of operating under an integrated resource plan, where both supply-side and demand-side resources are considered together, will require a multi-year commitment by the City. Therefore, year one of the action plans will identify the human and funding capital required to implement this IRP.

The City's budget cycle runs from January through April each year. Therefore, the 2015 budget is already completed. However, certain preliminary steps will be taken in 2015 to research current practices in DSM, appoint an internal IRP administrator, and develop "low-hanging fruit" DSM programs, such as, energy education and home energy audits.

Also in the 2015 budget cycle, the City will select IRP measurable objectives, develop avoided costs of energy and demand and run selected pilot DSM programs. The pilot programs will then be used to modify the IRP. The first two years of the IRP will be a steep learning curve.

Resource Options Chosen for implementation or further consideration were driven by the loss of a purchase power contract (OPPD), growth in system capacity responsibility under SPP regulations, and current budget constraints. By taking "baby-steps", the City will construct an IRP plan using any DSM energy and peak demand savings into a supply-side plan, then reduce the amount of purchased power and/or generating capacity added in the supply-side plan so that the City's power supply meets forecasted demand less DSM resources.

Section 6 – Environmental Effects of new resource acquisitions, within the City's IRP, must focus on minimizing environmental impacts, the IRP should provide a summary of the qualitative analysis of environmental impacts of new resources, and describe the efforts taken to minimize the adverse environmental effects of the new resource acquisition. Include a discussion of how the IRP planning process accounts for environmental effects, including any City specific policies or policies of the City's wholesale supplier that minimize the environmental impact of new resources.

Section 6 attachment No. 2 contains the environmental policies of the City's power suppliers. As noted in Section 3, GRDA supplied 47% of the Cities 2013 energy needs, OPPD supplied 39% and KCP&L (EMP1) supplied 12%.

In addition, as mentioned in Section 3, Supply-side resources, SPP's new Integrated Marketplace (IM) will supply the City's energy resources in the same proportion as SPP's generation mix each hour, day and season. For the spring of 2014, SPP generation by fuel type and by percentage in real-time was approximately;

1. Nuclear - 5%
2. Wind - 15%
3. Gas – Combined Cycle - 10%
4. Gas – Simple-cycle - 10%
5. Coal - 65%

Therefore, going forward, as more renewable resources are developed within SPP's footprint, the City will participate in those resources through the IM.

Section 7 – Public Participation in the IRP process must include ample opportunity for the public to fully participate in preparing and developing this IRP. A description of how the City engaged the public, including how information was gathered from the public and how those concerns were identified and incorporated into the IRP.

The IRP has been discussed between City's staff, the Electric Utility Advisory Board (EUAB) and the Mayor through interviews and presentations. The City hired an energy consultant with experience in developing Western's IRP. Some of the key issues that have come from these forums were the desire for the City to maintain their independence, flexibility and the ability to control cost.

The public was invited to review and comment on the IRP during a public comment period from July 30th to August 18, 2014. The notice of this review period was posted in the local paper on July 30th, 2014. There was a notice posted in City Hall on July 30th, 2014. The final draft of the IRP was posted on the City's official Web page on July 30th, 2014.

After considering public comments, the City Council accepted the final version of the IRP on August 18, 2014. In addition, the City Council adopted Resolution No. 1909 accepting the Integrated Resource Plan on August 18, 2014.

Section 8 – Action Plan & Measurement Strategies; the high level goals and objectives that are expected to be met by the implementation of the resource plan over its initial 5-year planning horizon.

High Level Goals and Objectives

Currently, the Utility uses a traditional approach to supply-side resource planning. The process is to forecast capacity and energy needs over the next 15 to 20 years and to meet the expected needs by acquiring the appropriate additions to the supply portfolio. The supply-side approach is undertaken independent of the Utility's demand-side activities. While the supply-side planning is an ongoing and established practice, the demand-side activities are undertaken on an ad hoc basis, independent of the supply-side activities.

Given the current, traditional planning procedures at the Utility, the initial high-level goal is to meet the customers' energy needs by designing and implementing a cost-effective energy efficiency methodology that would concurrently evaluate supply-side and demand-side resources on a level playing field. Basically, the goal is to establish the Utility's first integrated resource plan.

Getting from where the Utility is today compared to the goal of operating under an integrated resource plan, the initial objectives are the basic milestones toward creating and implementing the IRP. Importantly, to attain the initial objectives, the Utility will employ a feedback loop, where the early results from provisional plan designs and pilot programs will be used as input for IRP improvements and expansion.

Year One

During the first year of the 5-year IRP planning horizon, the Utility wants to accomplish the following, while funding is still ramping up to the annual levels eventually needed for full program implementation:

1. Conduct a preliminary survey. Inventory the human and capital resources within the utility that can be deployed for IRP. Inventory the data sources on customer use patterns and electricity supply options. List and evaluate the DSM activities and studies of the past 10 years. (See existing supply and demand resources described earlier.) Prepare preliminary spending estimates for the next two years for inclusion in the City's annual budget authorizations. Introduce plans for balancing Utility spending and investment deliberations between supply-side and demand-side management activities.
2. Select an efficiency program administrator and staff support. Charge the program administrator with the goal of delivering cost-effective energy efficiency. The program administrator will be responsible for designing, planning, administering, delivering, monitoring and evaluating efficiency program, with regular reporting to the City Council. The program administrator will be assisted, as needed, by other Utility staff chosen to add knowledge and experience in the areas of electrical engineering, mathematical modeling, statistical analysis, customer service, managerial finance and utility cost of service and ratemaking.
3. Research current practices. Study literature on IRP best practices, highlighting those design aspects applicable to the Utility's operating characteristics, especially its limited resources, operating scale, demographics and competitive situation. Search for relevant information and assistance available from government organizations, trade organizations, other utilities and non-governmental organizations, both regionally and nationally.
4. Select a cost-effectiveness measure. The Program Administrator Cost (PAC) Test will most likely be chosen as the initial, primary energy efficiency cost-effectiveness test. The PAC test compares

only the Utility's (the "program administrator") costs to the costs of avoided supply-side resources. Using the PAC Test as the beginning is important to program acceptable because it basically translates into the traditional cost-of-service ratemaking process where program costs and benefits are passed on to ratepayers in rates. A potential secondary cost test could be the Rate Impact Measure (RIM) Test so that any program-caused lost revenues due to lower sales can be considered as well.

5. Discover avoided costs of energy and demand. Where possible quantify the avoided cost for energy and demand by time of use and by customer class. This will involve forecasting marginal costs and marginal customer rates.
6. Select IRP measurable objectives. Leading candidates for objectives are increasing the load factor for each customer class and reducing the growth in electric energy and peak demand while maintaining system reliability and customer satisfaction. An important element in the initial selection of objectives is for the Utility to set the baseline from which to measure the benefits.
7. Institute a capital budgeting methodology process. Since IRP expenditures will be subject to normal City annual budgeting approval, the program administrator must allocate limited resources among competing energy efficiency programs. This allocation will be accomplished with capital budgeting techniques where potential endeavors will be ranked by their internal rates of return, using a discount rate reflecting the Utility's cost of capital and each program's perceived riskiness. Within the constraint of the limited capital available, the capital budgeting techniques will determine which programs yield the most return of the applicable time frame.
8. Run pilot DSM programs. Select and operate pilot programs using the initial values for avoided costs and the initial cost-effectiveness test. Identify target audiences for the pilot programs.

9. Use the pilot program results as input for modifying the IRP design. It is expected that the learning curve will be steep during the first and second years of the 5-year plan.

Year Two

The results from the initial program efforts will be compared to the plan's objectives. The findings will be used to modify, where needed, the IRP objectives, budget requests, internal staffing, outside consulting, avoided costs and effectiveness tests. With design improvements made and confidence in the IRP heightened, the successful pilot programs will be expanded and new ones initiated. Appropriate funding levels will be requested during the City's annual budget process, with the demand-side efforts to be bought more in line with the supply-side efforts.

Program results will also be used to improve quantification of energy efficiency targets, thereby improving the selection of future programs. At this stage of the planning horizon, the Utility should be better situated to refine DSM goals in terms of peak clipping, valley filling and strategic conservation.

Years Three through Five

Updates and modifications made during the first two years will be crucial and determinative in formulating expanded action plans and programs. Capital budgeting techniques will be refined as the method to rank and select expanding supply-side and demand-side opportunities within the constraints of the Utility's limited funding and personnel.

The initial Program Administrator Cost (PAC) Test will be reviewed to decide whether to add customer-participant costs, externalities, and qualitative impacts such as environmental and societal costs (i.e. the Total Resource Cost Test and the Societal Cost Test). The Participant Test will likely be continued as a means to qualify programs and to understand why targeted customers do not participate.

The administrator will use periodic IRP reports to the City Council to focus on economic successes of the overall plan and its component programs. Also, these reports to the City Council will assist it in setting

appropriate annual funding levels. Finally, the cost-effectiveness results will be evaluated by the City Council in deciding whether to integrate energy efficiency into utility system planning, annual budgeting and system operations.

Toward the end of Year 4 and into Year 5, the stakeholders will be brought together in a series of meetings for the purpose of formulating and documenting the IRP for the next 5-Year planning horizon. The emphasis will be on pursuing a least-cost strategy for meeting future energy needs, with equal consideration of supply and demand-side solutions. An issue to be addressed is whether and to what degree should the IRP goals be expanded to include environmental stewardship.

SECTION 9	SIGNATURES AND APPROVAL

IRP Approval:
Indicate that all of the IRP requirements have been met by having the responsible official sign below; **and** provide documentation that the IRP has been approved by the appropriate governing body (i.e. provide a copy of the minutes that document an approval resolution). *(See 10 CFR § 905.11 (b) (4)).*

Cheryl Harrison-Lee **(Name – Print or type)**	City Administrator **(Title)**
(Signature)	8/21/14 **(Date)**

Other Information:
(Provide/attach additional information if necessary)

IRP Posting Requirement:
10 CFR § 905.23 of the EPAMP as amended effective July 21, 2008, facilitates public review of customers' approved IRPs by requiring that a customer's IRP be posted on its publicly available Web site or on Western's Web site. Please check the method in which you will comply with this requirement within thirty (30) days of receiving notification the IRP has been approved:

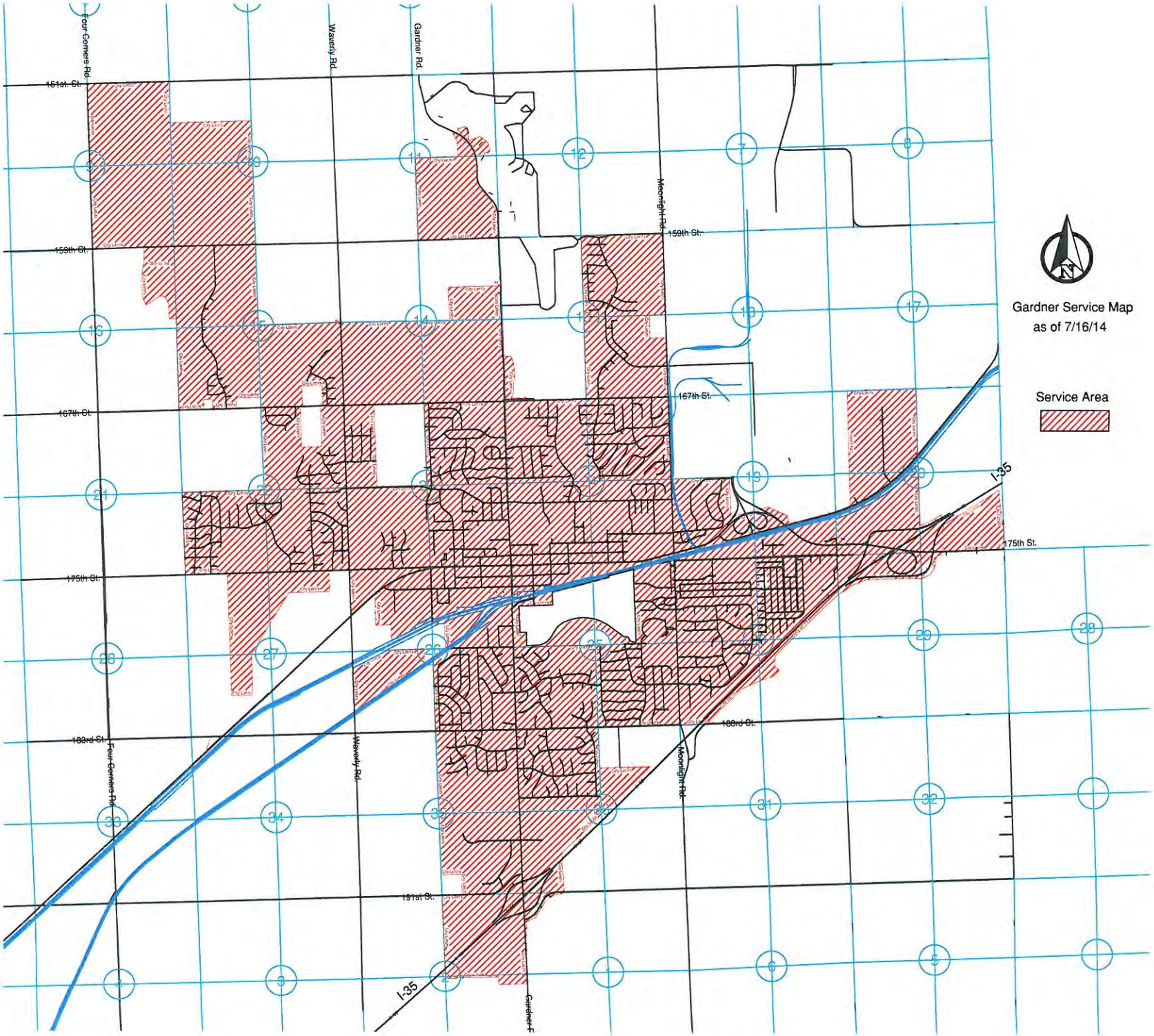
X	Customer will post the approved IRP on its publicly available website and send the URL to Western.
	Customer would like Western to post the approved IRP on Western's website.

IRP Updates:
Western's customers must submit updated IRPs every five (5) years after Western's approval of the initial IRP.

IRP Annual Progress Reports:
Western's customers must submit IRP progress reports each year within thirty (30) days of the anniversary date of the approval of the currently applicable IRP. Annual progress reports can be submitted using Western's on-line reporting tool, which can be accessed at: www.wapa.gov/es/irp

Section 1 - Attachment 1

- City of Gardner, Kansas
  - Electric Service Territory Map


Gardner Service Map
as of 7/16/14
Service Area
N
Four Corners Rd.
Waverly Rd.
Gardner Rd.
Moonlight Rd.
151st St.
159th St.
167th St.
175th St.
183rd St.
191st St.
I-35

Section 4 - Attachment 1

- State of Kansas – Energy Division
  - Facility Conservation Improvement Program
  - Efficiency Kansas 2.0 Loan Program
  - Efficiency Kansas – Lighting Loan Program

Energy Division

A Division of the Kansas Corporation Commission, funded through the federal State Energy Program (SEP).

FACILITY CONSERVATION IMPROVEMENT PROGRAM

Energy Savings Performance Contracting for Kansas Public Buildings

The Facility Conservation Improvement Program (FCIP) promotes and facilitates energy-saving projects in public buildings, such as schools, city offices, courthouses, and other facilities. **Established by the State in 2000**, the FCIP helps local governments, school districts, universities, hospitals, and others implement energy-efficiency and deferred-maintenance projects-with no upfront capital expenditures.

This **longstanding State program** uses an innovative approach known as **Energy Savings Performance Contracting (ESPC)** to improve public facilities. ESPC offers a budget-neutral way to make energy-efficiency and deferred maintenance improvements—and then repay all project costs with the money saved on energy and O&M costs.

To make it easy for public officials to access the benefits of performance contracting, the Energy Division has established partnerships with 13 private-sector **Energy Service Companies (ESCOs)**. These ESCOs provide turn-key project management and a guarantee that energy and O&M savings will cover all project costs.

Streamlined Procurement: No RFPs, No Bids.

FCIP's streamlined procurement process means there's no need to issue Requests for Proposals (RFPs). The program also saves time by freeing customers from having to develop specifications, write contracts, or hire outside consultants and engineers.

FCIP staff assists customers and advocates on their behalf every step of the way. The oversight provided by our **experienced FCIP team** ensures that customers fully understand all aspects of their project and the ESCO's guarantee of savings.

Identified nationally as a best practice, the FCIP lets busy public officials focus on their core mission, instead of complicated government procurement requirements.

FCIP is funded through customer fees, and uses no State funds. Fees are based on overall project cost and range from 4% on the smallest projects to just over 0.5% on very large projects. Fees can be included in total project financing. If customers do not sign a performance contract, no fees are charged.

Contact us to learn more about how FCIP can help you!

Stuart Yoho, CEM, CMVP
s.yoho@kcc.ks.gov

Terry Steuber, CEM, CMVP
t.steuber@kcc.ks.gov

FCIP
(785) 271-3352 / fcip@kcc.ks.gov

Energy Division

A Division of the Kansas Corporation Commission, funded through the federal ***State Energy Program (SEP)***.

Efficiency Kansas 2.0

Efficiency Kansas, 2.0 (EK) provides affordable financing for energy-efficiency improvements in homes, rental properties, and small businesses. Like the **original Efficiency Kansas Loan Program**, Efficiency Kansas 2.0 is based on the simple premise that the energy savings resulting from the improvements will cover all project costs, including interest and fees, over the term of the loan. To ensure that energy-efficiency improvements are cost-effective, EK requires an energy audit of the property. The audit must be performed by a private-sector energy auditor who has been qualified to work with the program.

Eligibility

All Kansas owners of existing homes and small businesses, regardless of their income, are eligible to participate in Efficiency Kansas 2.0, provided their utility offers the program. Participants must be in good standing with their utility with respect to bill payments and have access to 12 consecutive months of utility bills. **Click here to see the list of utilities currently participating with Efficiency Kansas**.

Tenants may also be eligible for financing. See the **EK Program Manual** for more information.

Loans and interest rate

The maximum amount of financing for approved improvements to existing residential structures is $20,000. For approved improvements to existing small commercial and industrial structures, the maximum amount of funding is $30,000.

Financing is provided through **Participating Utilities**. The loan for the approved improvements is attached to the property's utility meter and is repaid through an additional charge on the participant's monthly utility bill.

Depending on the term of the loan, interest rates will range from 5% to 8.5%. Loans are considered regular utility service and are tied to the customer's utility meter. See the **EK Program Manual** for more information.

Getting started

The first step is an energy audit of the customer's property, performed by a private-sector energy auditor who has been qualified to work with EK. **See the EK Program Manual** for more information or check out the **EK Participant Handbook**.

Contact

Energy Division

A Division of the Kansas Corporation Commission, funded through the federal ***State Energy Program (SEP)***.

Efficiency Kansas-Lighting

Efficiency Kansas-Lighting (EK-L) provides low-cost financing for energy-efficient lighting upgrades in small businesses. Like **Efficiency Kansas 2.0**, the lighting program is designed so that project costs, including interest and fees, are covered by the expected energy savings resulting from the lighting retrofit.

Eligibility

All Kansas owners of existing small businesses, regardless of their income, are eligible to participate in Efficiency Kansas-Lighting, provided the utility offers the program. The utility handles applications for financing. Customers must be in good standing with regard to their utility bill payments and have access to a minimum of 12 consecutive months of utility bills. **Click here to view the utilities currently participating with Efficiency Kansas.**

Loans and interest rate

The maximum amount of financing for approved improvements to existing commercial structures is $30,000. Depending on the term of the loan, interest rates will range from 5% (1 to 5 years) to 6% (6 years).

Financing is provided through Participating Utilities. The loan for the approved improvements is attached to the property's utility meter and is repaid through an additional charge on the participant's monthly utility bill. **See the EK-Lighting Participant Information** for more information.

Getting started

The first step is to get a lighting assessment, performed by a lighting professional qualified to work with the program. Following the assessment, participants will receive a Lighting Retrofit Plan outlining the recommended improvements and estimated savings. Once customers have obtained firm bids from their selected contractors, the assessor forwards the assessment and prices to the Energy Division for review and approval of an EK-L loan. When the project is completed and the work has been verified by the lighting assessor, the loan repayment charge is added to the customer's utility monthly bill until the loan is repaid. **See the Efficiency Kansas-Lighting Program Manual** for additional details.

Participating Utilities | **EK Program Manuals** | **EK2.0**

Section 5 - Attachment 1

- System Capacity Responsibility (SCR) Schedule
- Peak Demand with Reserve Forecast
- Annual Energy Forecast

KMEA's Existing and Forecast Demand and Energy Power Supply Analysis

Table 1	-	Annual Peak Demand and Energy Requirements
Table 2	-	Existing and Committed Power Supply Resources
Table 3	-	Projected Peak demand and Resources (Existing Situation)
Figure 1	-	Capacity Resource Need (Existing Situation)
Figure 2	-	Energy Supply (MWh) (Existing Situation)
Figure 3a	-	2013 Resource Need by Type (Existing Situation)
Figure 3b	-	2019 Resource Need by Type (Existing Situation)
Figure 7	-	Capacity Resource Need (Suggested Plan)
Figure 8	-	Energy Supply (MWh) (Suggested Plan)

Gardner Energy
System Capacity Responsibility (SCR) Analysis
With Required Operating Reserves

Year	SCR 5 Year Planning Rate with Reserves 12.00%	Existing Capacity	GRDA Addition	EMP Peak Additions	OPPD	Future Capacity Additions Required	WAPA	Total Capacity	Total Capacity Sufficiency/ (Deficiency)
2004	28,523	27,000		3,000	-			30,000	1,477
2005	31,818	27,000		5,000	-			32,000	182
2006	35,911	27,000	9,000	5,000	-			41,000	5,089
2007	37,273	27,000	9,000	5,000	-			41,000	3,727
2008	38,523	27,000	9,000	4,000	-			40,000	1,477
2009	39,432	27,000	9,000	4,000	2,000			42,000	2,568
2010	41,932	27,000	9,000	4,000	4,000			44,000	2,068
2011	43,636	27,000	9,000		10,000			46,000	2,364
2012	43,523	27,000	9,000		10,000			46,000	2,477
2013	41,364	27,000	9,000		10,000	-	700	46,700	5,336
2014	41,777	27,000	9,000		10,000	-	700	46,700	4,923
2015	42,195	27,000	9,000		10,000	-	700	46,700	4,505
2016	42,617	27,000	9,000		10,000	-	700	46,700	4,083
2017	43,043	27,000	9,000		10,000	-	700	46,700	3,657
2018	43,474	27,000	9,000		10,000	-	700	46,700	3,226
2019	43,909	27,000	9,000		-	-	700	36,700	(7,209)
2020	44,348	27,000	9,000		-	-	700	36,700	(7,648)
2021	44,791	27,000	9,000				700	36,700	(8,091)
2022	45,239	27,000	9,000				700	36,700	(8,539)
2023	45,691	27,000	9,000				700	36,700	(8,991)
2024	46,148	27,000	9,000				700	36,700	(9,448)
2025	46,609	27,000	9,000				700	36,700	(9,909)
2026	47,075	27,000					700	27,700	(19,375)
2027	47,545	27,000					700	27,700	(19,845)
2028	48,020	27,000					700	27,700	(20,320)
2029	48,501	27,000					700	27,700	(20,801)
2030	48,986	27,000					700	27,700	(21,286)

Gardner Energy
Demand Projections

Growth rates:

Growth 10 Yr:	3.80%
Growth 5 Yr. Planning Rate	1.00%
Weighted Growth Rate 25 % of 10 Yr& 75 % of 5 Yr:	1.70%
Growth 5 Yr Weighted 75 %	0.75%

		5 Yr Rate	Weighted 75.00%	10 Yr Rate	Weighted 25 % + 75 %
Actual	2004	25,100	25,100	25,100	25,100
Actual	2005	28,000	28,000	28,000	28,000
Actual	2006	31,602	31,602	31,602	31,602
Actual	2007	32,800	32,800	32,800	32,800
Actual	2008	33,900	33,900	33,900	33,900
Actual	2009	34,700	34,700	34,700	34,700
Actual	2010	36,900	36,900	36,900	36,900
Actual	2011	38,400	38,400	38,400	38,400
Actual	2012	38,300	38,688	39,859	39,053
Actual	2013	36,400	38,978	41,374	39,717
Forecast	2014	36,764	39,270	42,946	40,392
Forecast	2015	37,132	39,565	44,578	41,079
Forecast	2016	37,503	39,862	46,272	41,777
Forecast	2017	37,878	40,161	48,030	42,487
Forecast	2018	38,257	40,462	49,855	43,209
Forecast	2019	38,640	40,765	51,749	43,944
Forecast	2020	39,026	41,071	53,715	44,691
Forecast	2021	39,416	41,379	55,756	45,451
Forecast	2022	39,810	41,689	57,875	46,224
Forecast	2023	40,208	42,002	60,074	47,010
Forecast	2024	40,610	42,317	62,357	47,809
Forecast	2025	41,016	42,634	64,727	48,622
Forecast	2026	41,426	42,954	67,187	49,449
Forecast	2027	41,840	43,276	69,740	50,290
Forecast	2028	42,258	43,601	72,390	51,145
Forecast	2029	42,681	43,928	75,141	52,014
Forecast	2030	43,108	44,257	77,996	52,898

Gardner Energy
Demand Projections
With Required Operating Reserves

		5 Year Planning Rate with Reserves 12.00%	Weighted With Reserves 12.00%	10 Yr Rate With Reserves 12.00%	5 Yr Weighted With Reserves 12.00%
Actual	2004	28,523	28,523	28,523	28,523
Actual	2005	31,818	31,818	31,818	31,818
Actual	2006	35,911	35,911	35,911	35,911
Actual	2007	37,273	37,273	37,273	37,273
Actual	2008	38,523	38,523	38,523	38,523
Actual	2009	39,432	39,432	39,432	39,432
Actual	2010	41,932	41,932	41,932	41,932
Actual	2011	43,636	43,636	43,636	43,636
Actual	2012	43,523	43,964	45,294	44,378
Actual	2013	41,364	44,293	47,016	45,133
Forecast	2014	41,777	44,625	48,802	45,900
Forecast	2015	42,195	44,960	50,657	46,681
Forecast	2016	42,617	45,298	52,582	47,474
Forecast	2017	43,043	45,638	54,580	48,281
Forecast	2018	43,474	45,980	56,653	49,101
Forecast	2019	43,909	46,324	58,806	49,936
Forecast	2020	44,348	46,672	61,040	50,785
Forecast	2021	44,791	47,022	63,359	51,649
Forecast	2022	45,239	47,374	65,767	52,527
Forecast	2023	45,691	47,730	68,266	53,420
Forecast	2024	46,148	48,088	70,860	54,328
Forecast	2025	46,609	48,448	73,553	55,252
Forecast	2026	47,075	48,811	76,349	56,192
Forecast	2027	47,545	49,177	79,250	57,148
Forecast	2028	48,020	49,547	82,261	58,119
Forecast	2029	48,501	49,918	85,388	59,107
Forecast	2030	48,986	50,292	88,632	60,111

Gardner Energy
Energy Projections

	Actual	Load Factor	5 Yr Planning Rate Proj Demand	Proj Energy	Annual Growth Rate
Actual	2004	43.1%	25,100	94,755	
Actual	2005	42.3%	28,000	103,712	9.5%
Actual	2006	42.0%	31,602	116,275	12.1%
Actual	2007	43.9%	32,800	126,158	8.5%
Actual	2008	42.5%	33,900	126,225	0.1%
Actual	2009	40.8%	34,700	124,022	-1.7%
Actual	2010	42.4%	36,900	137,067	10.5%
Actual	2011	40.5%	38,400	136,397	-0.5%
Actual	2012	41.0%	38,300	137,619	0.9%
Actual	2013	43.9%	36,400	139,849	1.6%
Forecast	2014	43.9%	36,764	141,381	1.1%
Forecast	2015	43.9%	37,132	142,796	1.0%
Forecast	2016	43.9%	37,503	144,223	1.0%
Forecast	2017	43.9%	37,878	145,665	1.0%
Forecast	2018	43.9%	38,257	147,123	1.0%
Forecast	2019	43.9%	38,640	148,596	1.0%
Forecast	2020	43.9%	39,026	150,080	1.0%
Forecast	2021	43.9%	39,416	151,580	1.0%
Forecast	2022	43.9%	39,810	153,095	1.0%
Forecast	2023	43.9%	40,208	154,625	1.0%
Forecast	2024	43.9%	40,610	156,171	1.0%
Forecast	2025	43.9%	41,016	157,733	1.0%
Forecast	2026	43.9%	41,426	159,309	1.0%
Forecast	2027	43.9%	41,840	160,902	1.0%
Forecast	2028	43.9%	42,258	162,509	1.0%
Forecast	2029	43.9%	42,681	164,136	1.0%
Forecast	2030	43.9%	43,108	165,778	1.0%

Table 1
Annual Peak Demand and Energy Requirements
Historical and Projected
Gardner

Year	Net Peak Demand (MW)	Growth Rate (%)	Energy Requirement (MWh)	Growth Rate (%)	Annual Load Factor (%)
2007	32.9	0.0	127,322	0.0	44.18
2008	33.9	3.0	125,302	(1.6)	42.21
2009	34.2	0.9	124,025	(1.0)	41.40
2010	36.9	7.9	141,399	14.0	43.74
2011	38.3	3.9	141,399	0.0	42.10
Historical					
Estimated					
2012	38.8	1.2	138,517	(2.0)	40.75
Projected					
2013	39.3	1.2	140,196	1.2	40.75
2014	39.8	1.2	141,896	1.2	40.75
2015	40.2	1.2	143,616	1.2	40.75
2016	40.7	1.1	145,257	1.1	40.75
2017	41.2	1.1	146,916	1.1	40.75
2018	41.6	1.1	148,595	1.1	40.75
2019	42.1	1.1	150,293	1.1	40.75
2020	42.6	1.1	152,010	1.1	40.75
2021	43.0	0.9	153,380	0.9	40.75
2022	43.4	0.9	154,762	0.9	40.75
2023	43.7	0.9	156,157	0.9	40.75
2024	44.1	0.9	157,564	0.9	40.75
2025	44.5	0.9	158,984	0.9	40.75
2026	44.9	0.8	160,222	0.8	40.75
2027	45.2	0.8	161,469	0.8	40.75
2028	45.6	0.8	162,726	0.8	40.75
2029	45.9	0.8	163,993	0.8	40.75
2030	46.3	0.8	165,270	0.8	40.75
2031	46.6	0.6	166,254	0.6	40.75

Table 2
Existing and Committed Power Supply Resources
Gardner

Resource	Unit Type[1]	In Service Year	Estimated Retirement Year	Net Capacity (MW)	Fuel Type[2]	Classification
City Generation						
Unit #1	CT	1990	2040	13.50	G	Peaking
Unit #2	CT	1990	2040	13.50	G	Peaking
Total				27.00		
Purchase Power						
GRDA	PP	2006	2026	9.00	Hydro/Coal	Baseload
OPPD	PP	-	2018	5-20	-	Baseload
WAPA	PP	2013	2024[3]	0.70	Hydro	Int./Peaking
Total				14.7-29.7		

[1] IC = Internal Combustion Engine, CC = Combined Cycle, PP = Purchased Power

[2] DF = Natural Gas/Diesel, O = Diesel, G = Natural Gas

[3] End of initial term of agreement. Agreement expected to be extended.

Table 3
Projected Peak Demand and Resources (Existing Situation)
2012 through 2031
Gardner

Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Peak Demand (MW)	38.8	39.3	39.8	40.2	40.7	41.2	41.6	42.1	42.6	43.0	43.4	43.7	44.1	44.5	44.9	45.2	45.6	45.9	46.3	46.6
Planning Reserve (MW)	4.0	4.1	4.1	4.2	4.2	4.3	4.4	4.4	4.5	4.6	4.6	4.7	4.7	4.8	6.1	6.1	6.1	6.2	6.2	6.3
Capacity Responsibility (MW)	42.8	43.3	43.9	44.4	44.9	45.5	46.0	46.5	47.1	47.5	48.0	48.4	48.9	49.3	50.9	51.3	51.7	52.1	52.5	52.9
Committed Resources (MW)																				
WAPA	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
GRDA	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	-	-	-	-	-	-
OPPD	20.0	20.0	20.0	20.0	20.0	20.0	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-
City Generation	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Total System Capacity (MW)	56.7	56.7	56.7	56.7	56.7	56.7	56.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7	27.7	27.7	27.7	27.7	27.7	27.7
Capacity Surplus (Deficiency)	13.9	13.4	12.8	12.3	11.8	11.2	10.7	(9.8)	(10.4)	(10.8)	(11.3)	(11.7)	(12.2)	(12.6)	(23.2)	(23.6)	(24.0)	(24.4)	(24.8)	(25.2)

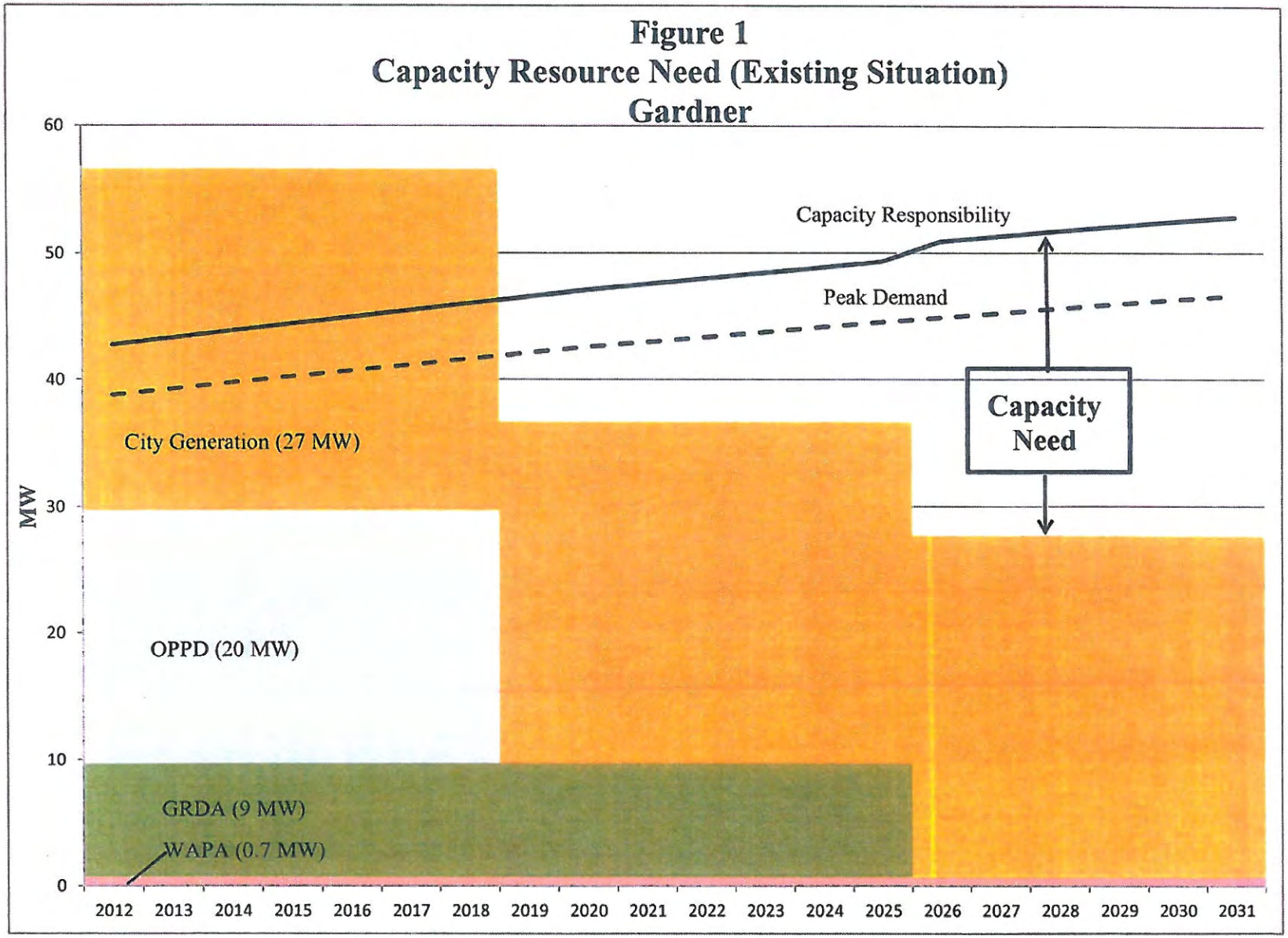
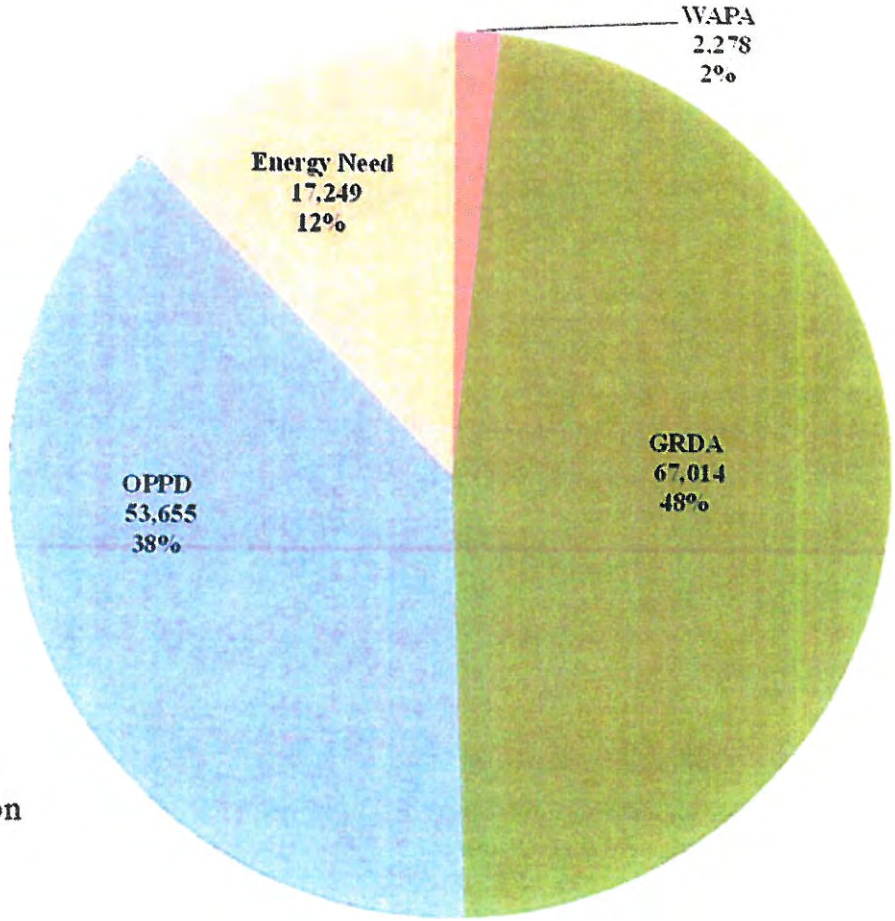


Figure 1
Capacity Resource Need (Existing Situation)
Gardner
MW
60
50
40
30
20
10
0
Capacity Responsibility
Peak Demand
Capacity Need
City Generation (27 MW)
OPPD (20 MW)
GRDA (9 MW)
WAPA (0.7 MW)
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031

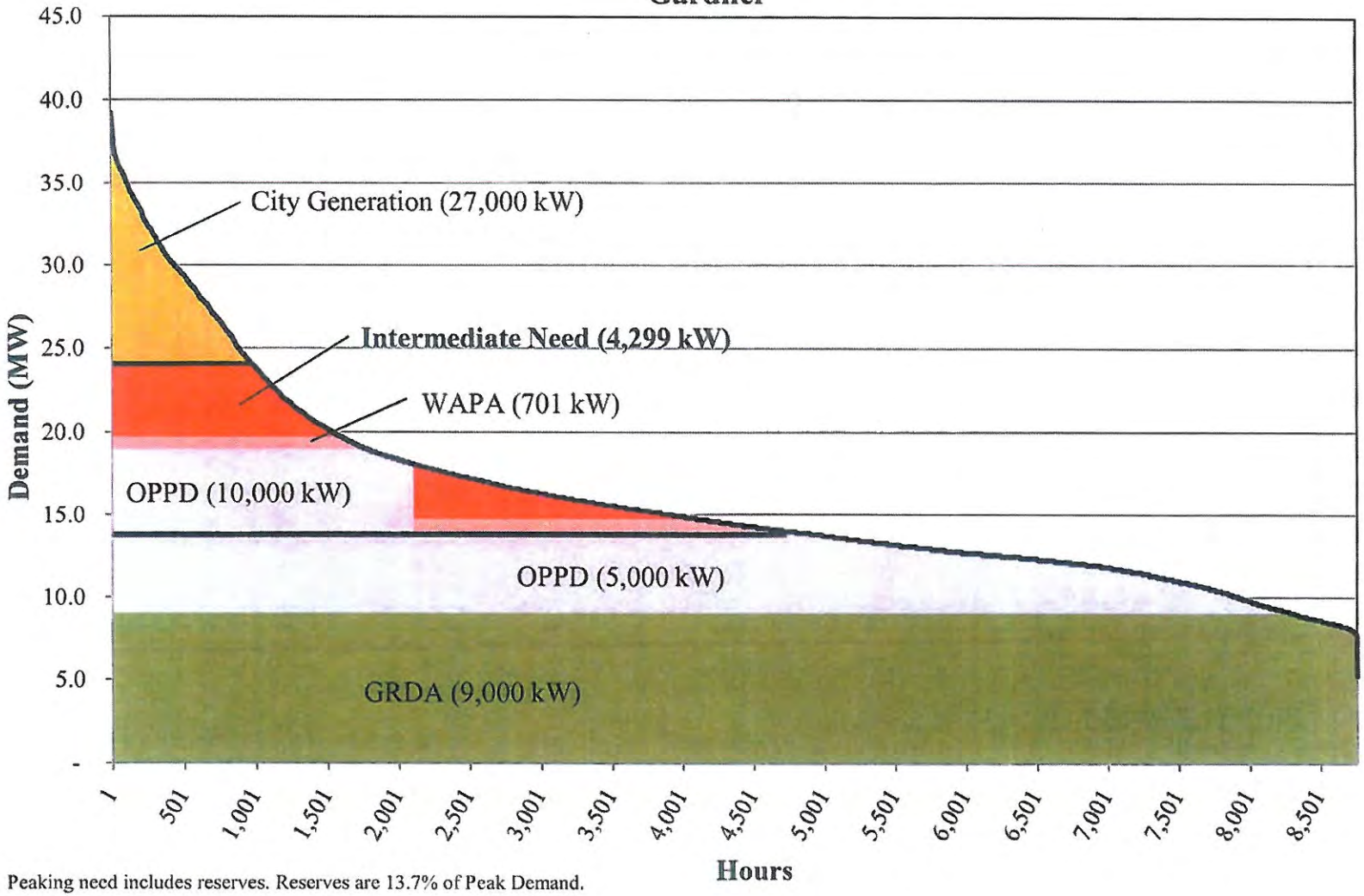
Figure 2
Energy Supply (MWh) (Existing Situation)
Gardner

2013



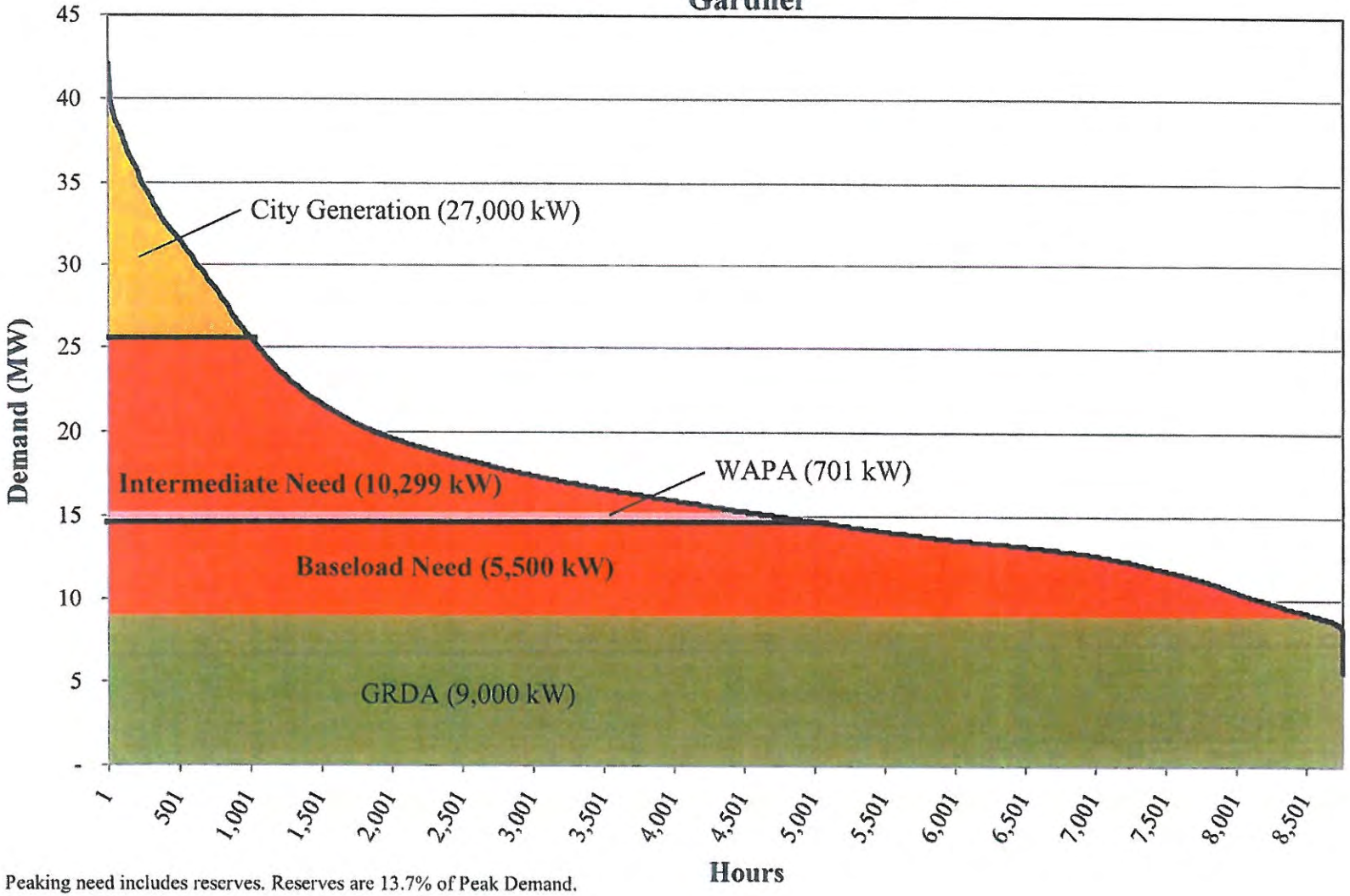
Note: Energy need would be supplied by peaking generation and/or market.

Figure 3a
2013 Resource Need by Type (Existing Situation)
Gardner



Peaking need includes reserves. Reserves are 13.7% of Peak Demand.

Figure 3b
2019 Resource Need by Type (Existing Situation)
Gardner



Peaking need includes reserves. Reserves are 13.7% of Peak Demand.

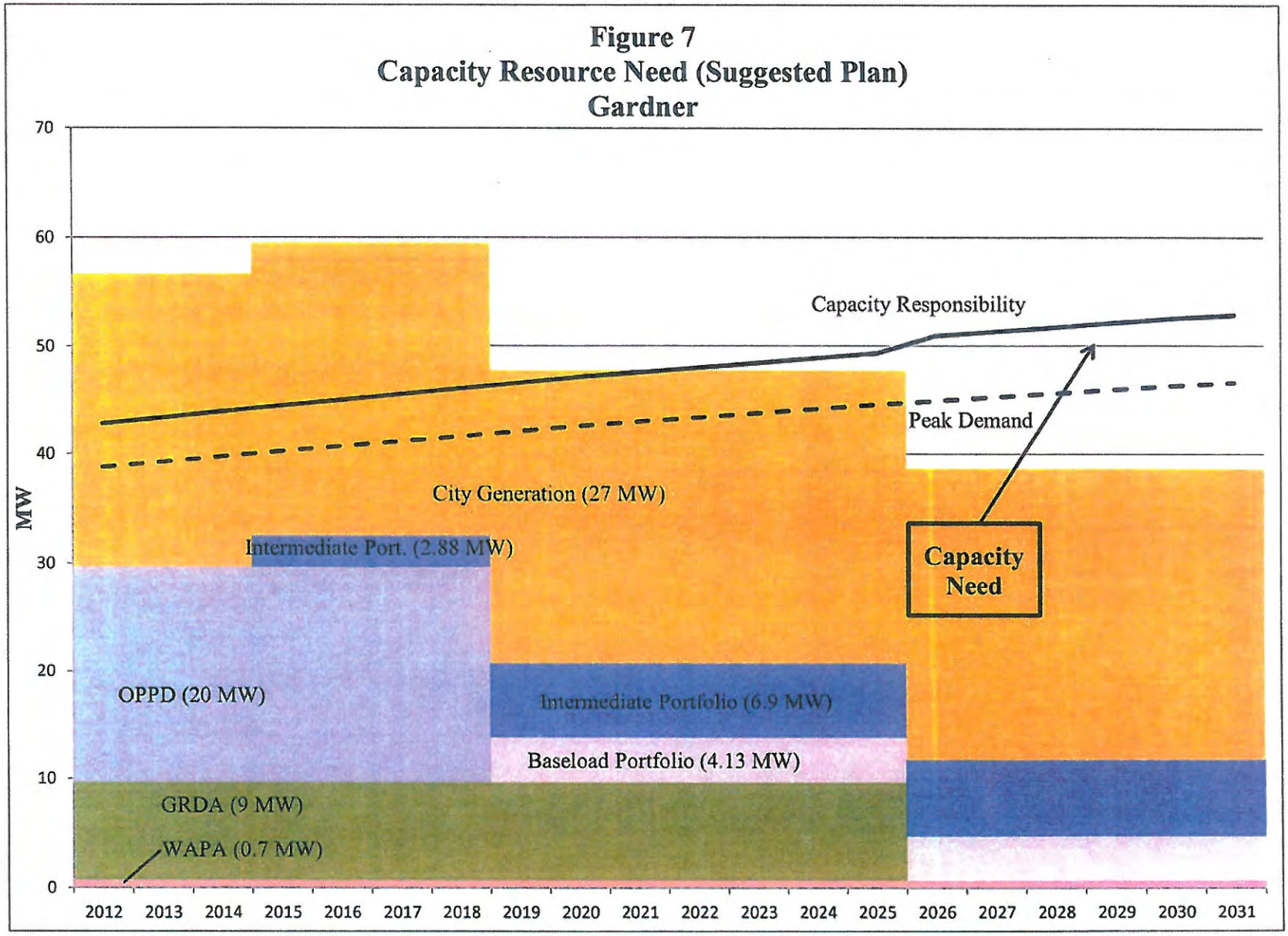
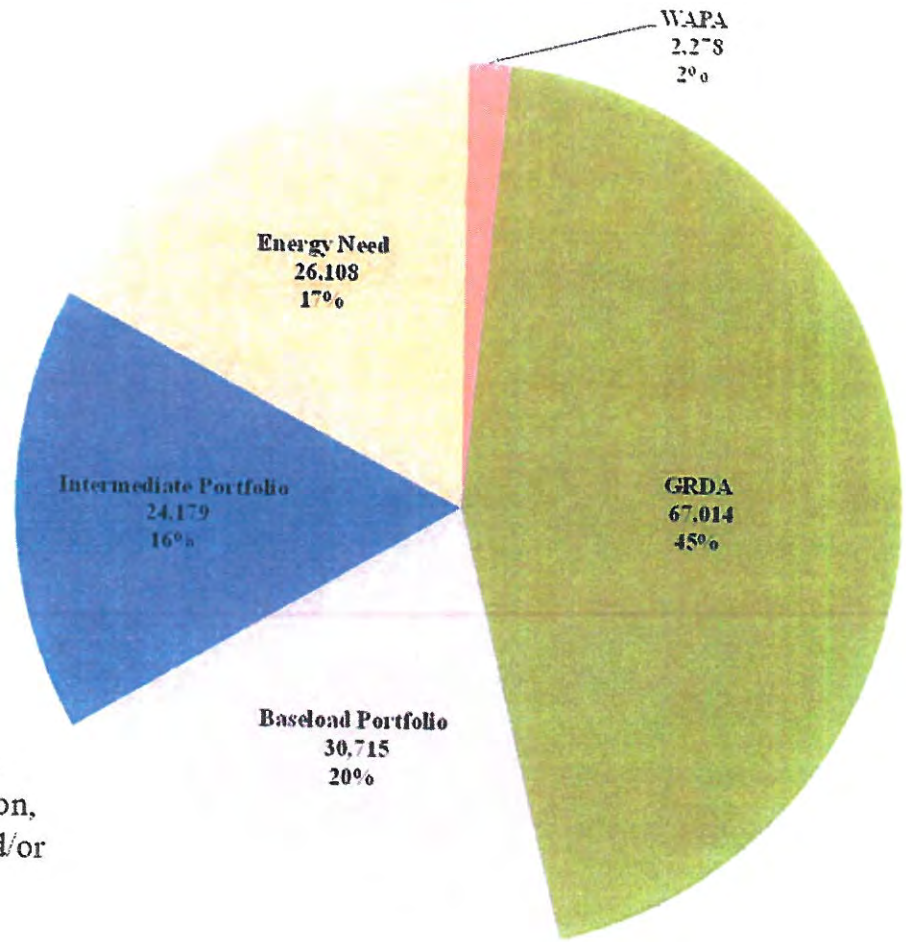


Figure 7
Capacity Resource Need (Suggested Plan)
Gardner
MW
70
60
50
40
30
20
10
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
Capacity Responsibility
Peak Demand
City Generation (27 MW)
Intermediate Port. (2.88 MW)
Capacity Need
OPPD (20 MW)
Intermediate Portfolio (6.9 MW)
Baseload Portfolio (4.13 MW)
GRDA (9 MW)
WAPA (0.7 MW)

Figure 8
Energy Supply (MWh) (Suggested Plan)
Gardner

2019



Note: Energy need would be supplied by peaking generation, peaking portfolio, market and/or future resources.

Section 6 – Attachment 2

- The Grand River Dam Authority Policy No. 6-1
  - Environmental Considerations
- The Omaha Public Power District establishes a new division;
  - Sustainable Energy and Environmental Stewardship
- Kansas City Power & Light (KCP&L);
  - A Decade of KCP&L's Sustainability Efforts

POLICY NO. 6-1

ENVIRONMENTAL CONSIDERATIONS

I. OBJECTIVE: To establish a policy concerning environmental considerations in connection with the furnishing of an adequate and reliable supply of electric power and energy to customers.

II. POLICY: The Grand River Dam Authority will:

A. Plan, construct, and operate utility facilities so as to provide its customers with an adequate and reliable power supply that is compatible with the environment.

B. Place environmental considerations in proper perspective with other vital issues such as safety, reliability, and cost. This will include staffing of adequate personnel to implement an effective environmental policy.

C. Explore alternative actions in order to avoid adverse environmental effects, including cost-effective, pro-environmental energy sources.

D. Carefully assess the potential impact of its actions on physical, natural, and aesthetic resources in order to avoid adverse environmental effects, and restore or enhance environmental quality to the greatest extent practicable.

E. Endeavor to avoid actions which might contribute to pollution of the air, water, or land; threaten health and public welfare; damage ecological systems of Flora or Fauna; curtail the range of beneficial uses of the environment; or serve short-term objectives to the detriment of long-term environmental goals.

F. Endeavor to avoid actions which might be detrimental to or diminish public enjoyment of existing or planned recreation resources, or resources of historic and scenic value.

G. Endeavor to avoid actions which might conflict with existing or contemplated land-use planning policies or appropriate governmental bodies, or with other public services.

H. Fulfill its utility responsibilities in an environmentally aware and environmentally responsible manner; take affirmative action to actively cooperate with groups interested in environmental resources; and keep the public informed of significant construction plans.

I. Coordinate proposed transmission line construction to the maximum extent possible to avoid disruption of floodplains or wetlands where there is a practical alternative, and minimize environmental harm to floodplains and wetlands.

ENVIRONMENTAL CONSIDERATIONS

In implementing this policy on environmental considerations, the Grand River Dam Authority will be guided by the environmental criteria and guidelines issued by agencies of the Federal Government under the National Environmental Policy Act and, where appropriate, by environmental guidelines and criteria which might be issued by State and local governments in areas in which it operates.

III. RESPONSIBILITY: Board of Directors and Management.

This policy supersedes and cancels all other existing policies and instructions which may conflict with its provisions.

DATE ADOPTED: June 20, 1990

DATE AMENDED: _____

REVIEW SCHEDULE: Annually

DATE REVIEWED: December 12, 2012

Greg Grodhaus, Chair

Daniel S. Sullivan, General Manager/CEO
Director of Investments

News Release

June 5, 2007

OPPD Announces New Energy Initiative

The Omaha Public Power District today officially launched a new energy initiative aimed at increasing its emphasis on renewable energy, conservation and concern for the environment. OPPD has created a new division, Sustainable Energy and Environmental Stewardship, to focus on these areas. Marc Nichols, who has served as OPPD's Division Manager - Facilities Management since 1983, will assume leadership of the new Division effective June 17, 2007.

OPPD President and CEO Gary Gates said Mr. Nichols will focus his efforts in several key areas: 1) incorporation of environmentally-friendly generating resources into OPPD's power generation mix, 2) promotion of energy efficiency efforts for residential and commercial customers, 3) the potential for internal energy efficiency within OPPD facilities, and 4) the overall environmental impact of all OPPD business operations, which will include continuing ongoing assessments of such activities as recycling, our supply chain, and use of biofuels.

"We plan to promote increased energy efficiency on the part of our customers and adoption of stronger energy-efficiency practices within our own facilities," said Mr. Gates.

"This approach will not only help the environment, it will help delay construction of major new power plants. When we do need additional electricity generation, we will look first toward the most environmentally friendly resources available to meet our needs."

"We will do what is reasonable and prudent to address OPPD's overall interaction with the environment," said Mr. Gates. "The move toward this sustainable energy approach will take some time, and it won't be easy or inexpensive. But, we know that the alternatives are also likely to carry a significant price tag as we're required to install costly emissions controls on existing power generating plants. With all of this in our future, we believe we're taking the path our customers prefer, and their support and involvement will be critical to the success of this effort.

Mr. Gates noted OPPD will be maintaining a delicate balance with some new initiatives as reliable and affordable electricity is essential for the health and well-being of its customers. That will remain a priority.

Mr. Nichols' first actions will be to inventory OPPD's programs, evaluate its future generation needs, and study ways to assist the utility in becoming a leader in sustainable energy.

A DECADE OF KCP&L'S SUSTAINABILITY EFFORTS

KCP&L believes in providing cleaner, more sustainable energy to customers. Since 2005, KCP&L has saved nearly 200 megawatts through energy-efficiency initiatives, enough to meet the demand of 38,000 homes. These efforts have created more than 60 jobs within the region and generated $50 million of economic activity. In addition to energy efficiency, KCP&L has the largest portfolio of renewable energy in the state of Missouri. By continually exploring new ways to expand sustainable energy efforts, KCP&L is able to better keep electricity affordable for everyone.

KCP&L
energizing *life*

2005

Fourteen Comprehensive Energy Plan Pilot Programs are offered to customers, making KCP&L the first utility in Missouri or Kansas to make a strong commitment to energy efficiency.

Oct. 2006

Spearville Wind Generation Facility, the first Kansas wind facility constructed and owned by an investor-owned utility, becomes operational. The facility now produces 148.5 MW of electricity.

July 2009

The Missouri Energy Efficiency Investment Act (MEEIA) is signed into law, with KCP&L the sole utility in Missouri to advocate its passage.

Nov. 2010

KCP&L begins a pilot to test 44 LED streetlights, providing additional energy efficiency through lighting in local communities.

May 2011

KCP&L's first electric vehicle charging station becomes operational. Since then, KCP&L has installed 20 charging stations in the Kansas City metro area.

Aug. 2011

Iatan 2, one of the cleanest, most efficient coal plants in the country, wins Power Plant of the Year Award from POWER Magazine.

Sep. 2011

Construction begins on environmental upgrades at the La Cygne power plant, significantly reducing emissions on the 1,400 MW of electricity produced.

Dec. 2011

KCP&L is the first utility to file under MEEIA. Fifteen energy-efficiency programs are offered to KCP&L Greater Missouri Operations customers.

Jan. 2012

KCP&L and the Kansas City Royals partner to install the largest in-stadium solar array in Major League Baseball at Kauffman Stadium.

Jan. 2014

KCP&L files for expansion of MEEIA programs to KCP&L Missouri customers, and announces the purchase of 400 MW of wind power in Kansas and Missouri.