

# Summary of Municipal Consumption of Electricity

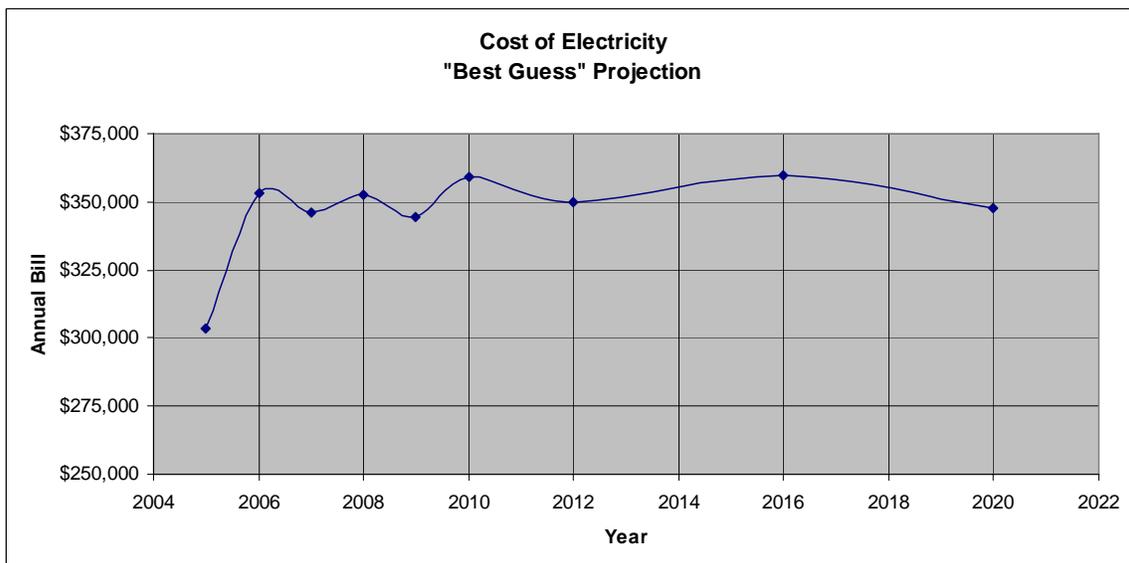
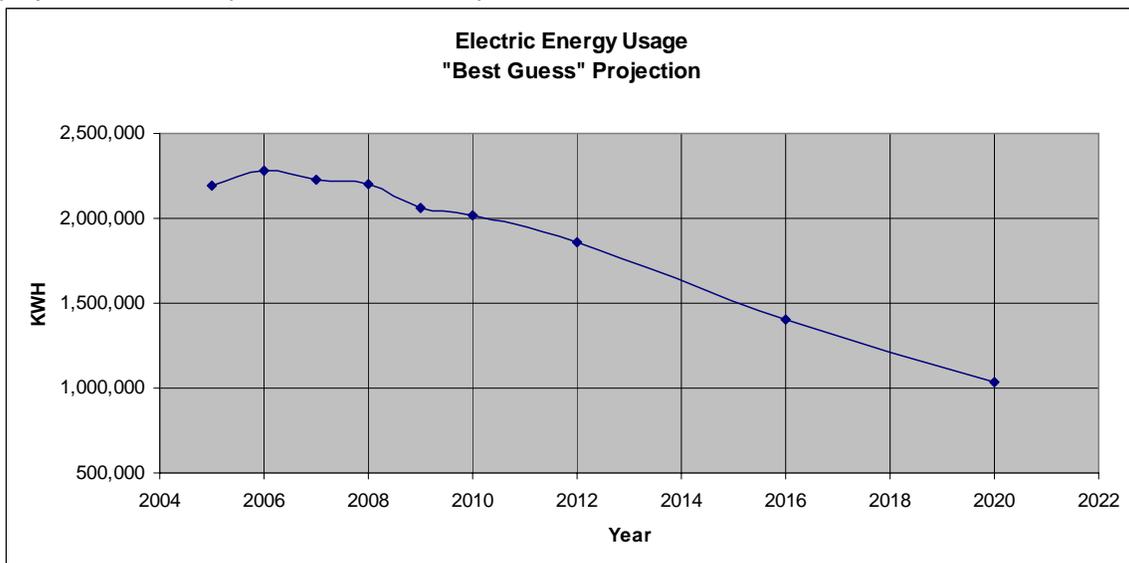
## City of Hermosa Beach

### 2005 through 2020

**SUMMARY:**

1. Changes implemented since 2005 have reduced the City's overall consumption of electricity for municipal uses by 12%, eliminating approximately 130 tons of carbon dioxide emissions annually.
2. Current projects, to be completed no later than 2012, will reduce overall consumption by an additional 7%, eliminating an additional 80 tons of carbon dioxide emissions annually.
3. Continued emphasis on energy efficiency could reasonably cut overall consumption of electricity by roughly 50% from 2010 to 2020, eliminating approximately 500 tons of carbon dioxide emissions annually.
4. The City's annual electric bill, in current dollars, has remained approximately constant since 2006, despite significant increases in electric rates. This trend may be expected to continue through the end of the decade with continued emphasis on energy efficiency. Changes implemented since 2005 are currently saving roughly \$50,000 per year on the City's power bill.

The charts shown below show historical data through 2010 and projected data based on the projects and assumptions listed in this report.



# Summary of Municipal Consumption of Electricity

## City of Hermosa Beach

### 2005 through 2020

#### CURRENT PROJECTS:

- **CIP No. 11-662 EECBG Energy Efficiency Upgrades:** This project, which is funded with \$108,000 of ARRA grant funding, will replace the existing lighting fixtures in the Parking Structure with new, high efficiency lighting and controls. It will also replace some of the existing lighting fixtures at the Community Center tennis courts with new fixtures. Anticipated completion date is January 2012. Energy savings approximately 140,000 KWH per year. (70 tons of carbon dioxide emissions annually)
- **CIP 02-612 Public Works Yard Improvements:** This project will construct a new Vehicle Maintenance Building, approximately 4,000 square feet total, to replace the existing facility. Anticipated completion date is early 2012. Budget \$300,000. Expected energy savings approximately 5,000 KWH per year. (2.5 tons of carbon dioxide emissions annually)
- **Community Center 2011 Electrical Project:** The project scope is still being determined, but it is anticipated to include rewiring and controls in the Community Center south wing and gymnasium, and replacement of house lights in the main theater. Anticipated completion date is early 2012. Budget \$60,000. Expected energy savings approximately 12,000 KWH per year. (6 tons of carbon dioxide emissions annually)
- **Lighting Controls for Field Lights at Clark Field:** This project will install lighting controls on the field lights at Clark Field. In addition to improved operation of the lights, the project will significantly reduce the power bill by allowing the rate schedule to switch to an area lighting rate. Better controls should also reduce overall power consumption. Anticipated completion date is Fall 2011. Budget approximately \$15,000. Expected energy savings approximately 6,000 KWH per year. (3 tons of carbon dioxide emissions annually)

#### POTENTIAL FUTURE PROJECTS:

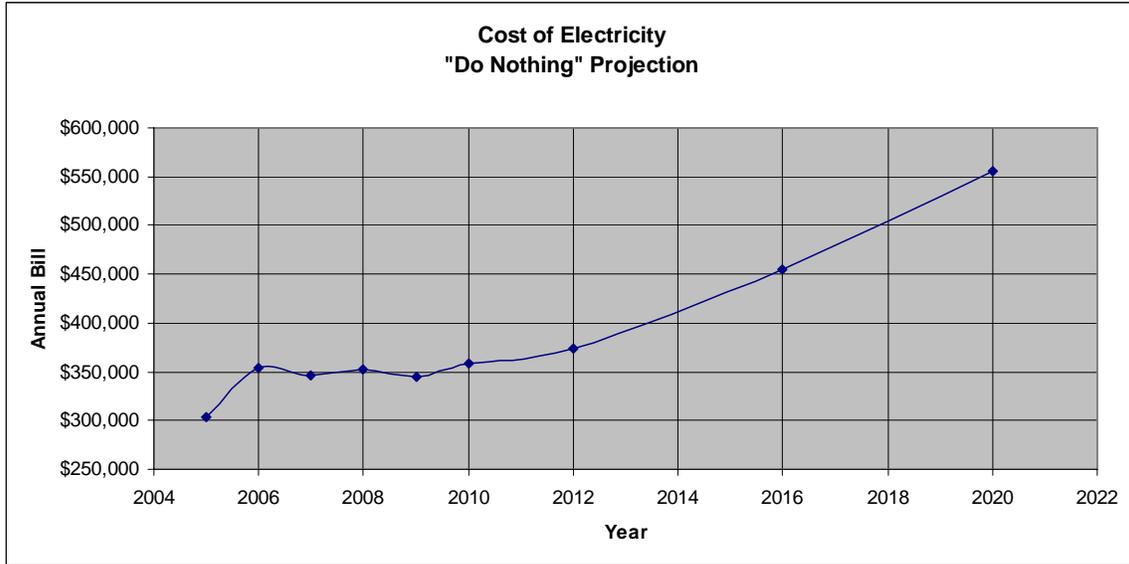
- **Civic Center Complex:** The Civic Center uses in excess of 20% of the total municipal consumption of electricity. Reasonable improvements in the efficiency and control of HVAC, lighting, and office equipment are anticipated to reduce consumption by 40% by 2020. Estimated energy savings 180,000 KWH per year. (90 tons of carbon dioxide emissions annually)
- **Street Lighting:** Street lighting is the single largest municipal use of electricity, accounting for nearly half of our total consumption of electricity. Technological changes, which are rapidly improving efficiency and control of street lighting, will dramatically reduce consumption while improving the quality of light. The projection shown assumes 60% reduction by 2020. Estimated energy savings 480,000 KWH per year. (240 tons of carbon dioxide emissions annually)
- **Clark Field:** Replace field lights and court lights. Estimated energy savings 16,000 KWH per year. (8 tons of carbon dioxide emissions annually)

#### ASSUMPTIONS:

- Energy consumption shown is municipal use only and does not include residential, commercial, or other uses.
- Edison rates will increase at 5% per year.
- 1.0 KWH is equivalent to 1.0 lb. carbon dioxide emissions.
- Some estimates are very rough and subject to future refinement.

# Summary of Municipal Consumption of Electricity City of Hermosa Beach 2005 through 2020

The chart shown below shows historical data through 2010 and projected energy usage assuming no change to consumption after 2010.



**Best Guess  
Electric Energy Usage Projections  
City of Hermosa Beach**

Description	Peak Value		2010 Baseline				2012 Estimate					2016 Estimate					2020 Estimate				
	Annual Bill	Annual KWH	Annual Bill Amt	Annual KWH Usage	Ave Energy Cost \$/KWH	Annual Max KW	Annual Bill Amt	Annual KWH Usage	Ave Energy Cost \$/KWH	Anticipated Reduction KWH	Description of Anticipated Reduction	Annual Bill Amt	Annual KWH Usage	Ave Energy Cost \$/KWH	Anticipated Reduction KWH	Description of Anticipated Reduction	Annual Bill Amt	Annual KWH Usage	Ave Energy Cost \$/KWH	Anticipated Reduction KWH	Description of Anticipated Reduction
1City Hall	\$62,843	492,320	\$57,241	440,960	\$0.130	141.6	\$62,965	440,960	\$0.143			\$46,090	264,576	\$0.174	176,384	Assume 40% reduction in KWH due to HVAC, lighting, and controls upgrades	\$56,230	264,576	\$0.213		
1Comm Cntr	\$50,606	302,037	\$33,692	218,777	\$0.154	110.9	\$35,029	206,777	\$0.169	12,000	2011 electrical project & misc	\$42,735	206,777	\$0.207			\$41,709	165,422	\$0.252	41,355	Assume 20% reduction from 2016.
1ParkStruct	\$26,393	201,900	\$20,209	156,000	\$0.130	31.8	\$8,265	58,000	\$0.143	98,000	CIP 11-662 EECBG Upgrades	\$10,083	58,000	\$0.174			\$12,302	58,000	\$0.212		
1PW Yard	\$7,931	46,514	\$6,117	36,337	\$0.168	4.6	\$5,719	30,886	\$0.185	5,451	CIP 02-612 PW Yard Renovation	\$6,978	30,886	\$0.226			\$6,810	24,709	\$0.276	6,177	Assume 20% reduction from 2016.
Misc Bldgs	\$22,091	127,566	\$9,580	52,819	\$0.181	5.4	\$10,538	52,819	\$0.200			\$12,856	52,819	\$0.243			\$12,547	42,255	\$0.297	10,564	Assume 20% reduction from 2016.
<b>Subtotal -- Buildings</b>	<b>\$169,321</b>	<b>1,123,718</b>	<b>\$126,839</b>	<b>904,893</b>	<b>\$0.140</b>	<b>294.3</b>	<b>\$122,516</b>	<b>789,442</b>	<b>\$0.155</b>			<b>\$118,742</b>	<b>613,058</b>	<b>\$0.194</b>			<b>\$129,599</b>	<b>554,962</b>	<b>\$0.234</b>		
CC Courts	\$17,475	85,834	\$7,946	66,193	\$0.120	45.4	\$3,459	26,193	\$0.132	40,000	CIP 11-662 EECBG Upgrades	\$998	6,193	\$0.161	20,000	Replace remaining fixtures	\$1,217	6,193	\$0.197		
Clark Courts	\$1,340	16,640	\$1,340	16,640	\$0.08	15.2	\$1,474	16,640	\$0.089			\$1,798	16,640	\$0.108			\$878	6,656	\$0.132	9,984	Assume 60% reduction due to new fixtures
Clark Field	\$27,073	61,400	\$27,073	61,400	\$0.44	62.0	\$7,297	55,260	\$0.132	6,140	Install lighting controls and change rate schedule to AL-2	\$6,232	38,682	\$0.161	16,578	Assume 30% reduction due to new field lights	\$7,603	38,682	\$0.197		
Misc Lighting	\$1,963	10,854	\$1,876	9,796	\$0.192	14.0	\$2,064	9,796	\$0.211			\$2,518	9,796	\$0.257			\$2,457	7,837	\$0.314	1,959	Assume 20% reduction from 2016.
<b>Subtotal -- Exterior Lighting</b>	<b>\$38,235</b>	<b>154,029</b>	<b>\$38,235</b>	<b>154,029</b>	<b>\$0.248</b>	<b>136.6</b>	<b>\$14,294</b>	<b>107,889</b>	<b>\$0.132</b>			<b>\$11,545</b>	<b>71,311</b>	<b>\$0.162</b>			<b>\$12,155</b>	<b>59,368</b>	<b>\$0.205</b>		
City-owned	\$45,011	481,966	\$38,417	407,989	\$0.094	0.0	\$42,258	407,989	\$0.104			\$20,622	163,196	\$0.126	244,793	Assume 60% reduction due to switch to LED/induction w/ controls	\$25,159	163,196	\$0.154		
Edison-owned	\$138,503	473,771	\$138,503	463,444	\$0.299	0.0	\$152,353	463,444	\$0.329			\$185,870	463,444	\$0.401			\$158,733	185,378	\$0.856	278,066	Assume 60% reduction due to switch to LED/induction w/ controls
<b>Subtotal -- Street Lighting</b>	<b>\$176,927</b>	<b>944,500</b>	<b>\$176,919</b>	<b>871,433</b>	<b>\$0.203</b>	<b>0.0</b>	<b>\$194,611</b>	<b>871,433</b>	<b>\$0.223</b>			<b>\$206,492</b>	<b>626,640</b>	<b>\$0.330</b>			<b>\$183,892</b>	<b>348,573</b>	<b>\$0.528</b>		
<b>Other Electrical</b>	<b>\$25,625</b>	<b>168,194</b>	<b>\$16,928</b>	<b>89,958</b>	<b>\$0.188</b>	<b>12.3</b>	<b>\$18,620</b>	<b>89,958</b>	<b>\$0.207</b>			<b>\$22,717</b>	<b>89,958</b>	<b>\$0.253</b>			<b>\$22,172</b>	<b>71,966</b>	<b>\$0.308</b>	<b>17,992</b>	<b>Assume 20% reduction from 2016.</b>
<b>TOTAL</b>	<b>\$358,921</b>	<b>2,279,287</b>	<b>\$358,921</b>	<b>2,020,313</b>	<b>\$0.178</b>	<b>443.2</b>	<b>\$350,041</b>	<b>1,858,722</b>	<b>\$0.188</b>	<b>161,591</b>		<b>\$359,497</b>	<b>1,400,967</b>	<b>\$0.257</b>	<b>457,755</b>		<b>\$347,817</b>	<b>1,034,869</b>	<b>\$0.336</b>	<b>366,098</b>	