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Economic Impacts Associated with Improvements to Storm Lake

This report analyzes the economic impacts associated with water quality improvements to Storm Lake and the build up of recreational facilities in Storm Lake and Buena Vista County. The impacts are focused on the effects of spending by an increased number of visitors that would likely result after dredging the lake and constructing additional facilities and attractions.

Previous work by CARD researchers has estimated visitation rates to Iowa Lakes. (http://www.card.iastate.edu/environment/) Subsequent follow-up surveys in Storm Lake have evaluated visitor activities and spending patterns during these visits. The visits focus on open water and summer activities including boating, fishing, camping and hiking. This information is summarized in Tables 1-5. Using the estimates of resident versus non resident visitors from this previous research, we estimate 267,162 visitors came to the area because of the Lake in our baseline year of 2002-2003. Table 5 indicates that 173,655 (65%) of these visitors to the Lake were non-residents. The aggregate spending in Storm Lake by all the visitors was an estimated $22.8 million allocated among the retail categories identified in Table 4. These estimates are based on Storm Lake in its current condition.

In the survey, visitors were asked how improvements to Storm Lake would affect the number of visits they make to the area. We interpret this question to apply to water quality improvements as well as amenity investments such as lodging to take advantage of the cleaner lake. Based on their responses, we estimate that visitation rates would increase by 55%. At current spending rates, the Lake improvements are expected to increase direct tourism spending by $12.6 million during the summer season.

The visitor spending detailed in Table 6 relates mostly to water-based activities occurring during the six month open water season. Since lake development is aimed at year-round usage of the facilities by including trails and an indoor water park, we develop estimates of additional spending occurring during the remainder of the year. Other winter attractions include: snowmobiling, ice fishing and cross country skiing on multi-purpose trails, along with an indoor water park facility. The proposed lodge would also be promoted as a conference facility intended to draw visitors during the winter season. Winter visitation rates are expected to be lower however; we estimate visitors and spending to be only one half of the level seen during the summer months. Using these rates we estimate additional spending during winter months at $6.3 million. Adding this to the summer totals, lake improvements are expected to result in an estimated annual increase of $18.9 million in direct spending in the Storm Lake area once the effects from a fully developed set of facilities are realized. These estimated impacts are presented in Table 7.

The spending categories from the survey are used to allocate aggregate spending in order to determine which businesses will be most affected by the increased spending. Table 8 includes information on state-wide average sales per establishment by retail category. These averages reflect a wide range of business situations statewide and may not be the actual outcome in Storm Lake. The opportunity for new establishments will be related to the slack in local stores and the size of new businesses that might start up. The numbers could also vary depending on the mix of new stores that might start up in response to tourism traffic.

Based on the state averages for the different retail and service sectors, we expect about 27 new businesses to be supported by the increase in sales activity. The expenditure survey suggests that about $3.5 million will be spent on lodging in the region. Based on the marketing analysis for the new lodge with 80 rooms and 70% occupancy at $85 per night, about $1.74 million will be spent at the new lodge. This implies that about $1.76 million will spent at other facilities, supporting 2-3 additional facilities based on state averages.

Income and employment estimates associated with expanded visitation can be estimated using an Input-Output model for the region. An Input-Output model is essentially a general accounting system tracking expenditures and purchases among sectors in the local economy. Using the IMPAN data and modeling system, an I-O model is configured for Buena Vista County as the local economic region. This model is then used to estimate economic impacts associated with the project.

After the project is completed, the local economy is stimulated by new visitors making retail purchases. The I-O model takes these estimates of new tourism spending, tracks them through the rest of the economy and summarizes the secondary and overall purchases. The estimates of how the increased $12.6 million works through the local economy during the summer months is presented in Table 9. The $6.3 million of additional spending in the region during the winter months are presented in Table 10. The combined annual economic effects, direct and secondary, are presented in Table 11. Overall we estimate the total economic impacts on the region will be $28.4 million dollars of sales, $10.7 million of new income and 690 new jobs. Most of this activity, including the indirect and induced effects, is focused in the retail and service sector as indicated by the initial spending survey. Many of these service and retail sector jobs are less than full-time positions. We estimate, after adjusting for full time equivalence, that the earnings support about 490 full time equivalent positions.

The presence of an 80-room lodge acts as part of the draw to maintain a year round flow of visitors and spending in the region. Our overall estimates of economic activity include these lodge effects. The estimates of new jobs and payroll presented in Table 11 are consistent with the estimate of 27 new businesses likely to be started with the increased spending.

Much of the $18.9 million of the expected new spending is subject to sales tax including the local option sales tax. After deducting $2.08 of fuel sales and 60 % of the grocery and supplies as nontaxable, we estimate that $14.8 million of the annual spending is subject to sales tax. An additional $3 million of the indirect and induced sales computed from the I-O analysis are in the taxable retail and service categories as well for a total of $17.8 million, including lodging. Since lodging is subject to its own tax and is not included in a Local Option Tax, we estimate that there will be about $14.4 million of additional taxable retail sales in the region due to the enhancements in Storm Lake. These sales translate into about $144,000 of additional local option sales tax revenues to be shared in Buena Vista County. Storm Lake's share of this revenue would be about $62,000. School Districts in the County would also share in additional $144,000 revenue through their 1% local option tax. Storm Lake schools would receive about $72,000.

Statewide revenue effects are expected as well. Based on statewide averages for the level of general fund revenues (income, sales, corporate, and misc. taxes) in relation to new personal income, we anticipate about $861,184 of new revenues to the state annually from this development.

Economic and Community Development Opportunities

We anticipate that improvements to the lake at Storm Lake will positively impact the region's quality of life, making it an attractive location for new business start ups and new residents. These quality of life attributes are also likely to attract new residents. Given the relative scarcity of lake front property in Iowa, a potentially important development project would be the addition of up to 30 new condo units on lake front property in Storm Lake.

The amenities of an improved lake should also benefit local economic development efforts. The job creation experience of the Dickinson County and Lake Okoboji region provides an example of the potential offered by an amenities-based economic development effort. Dickinson County is one of only a few counties gaining population in the Northwest Iowa region. Underlying their population growth is a steady growth in levels of personal incomes and job creation in the region during the 1990s. Data from the US Bureau of Economic Analysis illustrates this economic growth in Dickinson County in the last decade (Tables 12-13). While recreation and retirement living contribute to the growth in these numbers, there have been gains in manufacturing and business related services as well. The fact that the surrounding counties are not achieving this balanced pattern of growth suggests the Dickinson County region is successfully capitalizing on the amenity value the lakes offer their region. Between 1990 and 2000, earnings by place of work, which is a good measure of job creation activity, grew by $139.46 million or 88% in Dickinson County. Commuting patterns indicate a strong inflow of workers from surrounding counties. In contrast, earnings in Buena Vista County grew by 54.7% during this period.

During the same decade, total personal income by place of residence grew by $206.9 million or 74.5% in Dickinson County. Growth in total personal income in Buena Vista County was 48.8% during this period. Inflation as measured by the CPI grew by 31.8% during this decade, so clearly there has been strong new economic growth in the county. Total personal income includes income from non job sources such as pensions, retirement payments and dividend interests and rent and can come into a region without being associated with a job. These numbers indicate that economic development, population growth and new job creation was a major part of the growth in Dickinson County. These growth rates for Dickinson County are compared to Buena Vista County in Table 14.

Developing Storm Lake into an attractive amenity can serve as a similar resource for economic development growth in Storm Lake and Buena Vista County. The experiences of Dickinson County in the Okoboji Lake region can serve as a guide to the development potential that lake amenities can offer. The Lake Okoboji region has been in the recreation business for many years and has more acres of lake and shoreline than Storm Lake. Dickinson County has 13,764 acres of lakes compared to the 3,097 acres in Storm Lake, or about 22.5% as many acres (http://www.card.iastate.edu/lakes/regionmap.aspx?region=nw). If Buena Vista County (and Storm Lake) had achieved the same growth rates as Dickinson County, annual total personal income would have been 25.7% higher, or $123.9 million higher than the $482.15 million reported in 2000 (Table 15). Total annual earnings in Buena Vista County would have been 33.3% or $115.46 million greater than the $346.73 million reported in 2000. If we use the acres of lakes as an index of development potential, the economic growth would be scaled back to $27.9 million of additional personal income and $26 million of additional annual earnings

These different growth rates from Dickinson County and the indexed growth rate can be contrasted to the performance of Buena Vista County during the 1990s. In Table 15 we present projected economic performance in Buena Vista County in current dollars under different scenarios. If we assume that Buena Vista County continues at its current growth rate, by 2010 personal income would be $717.4 million and earnings would be $536.4 million. Under a scenario (Scenario A) where Buena Vista County growth rates would increase by a value indexed to lake acreage, personal income is expected to increase to $759.7 million and earnings to $576.6 million. If Buena Vista County could achieve growth rates realized by Dickinson County during the 1990s, personal income would increase to $901.8 and earnings increase to $715 million by 2010 (Scenario B). Comparing these two projected levels of income and earnings to the 2010 baseline gives an indication of the potential from pursuing an effective lake and amenities-based strategy. The projections range from $42.3 million to $184.3 million of new personal income and $40.2 million to $178.6 million of new earnings over the baseline growth by 2010.

The composition of this projected growth is not developed in this report. Patterns in the national economy suggest that more of the job growth will be in the professional service and specialty manufacturing areas. Amenity issues become important for these types of businesses. Lake-based amenities are relatively scarce in Iowa. By concentrating on amenities and quality of life investments for both tourism and economic development in Storm Lake and aggressively pursuing development strategies, growth rates at the higher end of this spectrum could be expected. Either of these growth rates will not just happen; they need to be promoted as part of an integrated marketing and development plan.

Table 1. Survey Respondents Activities (%).

Category	Storm Lake		
	Resident	Nonresident	
Reason for the Visit[a]			
Fishing	57.3	55.2	
Recreational Boating	53.8	43.0	
Swimming/Beach Use	37.6	24.9	
Camping	29.1	37.1	
Picnic	33.3	14.0	
Other[b]	7.7	5.9	

[a]Visitors responded multiple activities for using the lake.
[b]Other reasons for visiting include biking, nature viewing, and playing other sports.

Table 2. Visitation Patterns (%).

Patterns	Storm Lake		
	Resident	Nonresident	
Spending Days			
Single	72.6	50.2	
Multiple	27.4	49.8	
Total Trips			
1 – 10	35.0	81.4	
11 – 20	21.4	10.9	
Over 20	43.6	7.7	

Table 3. Group Size (%).

Group Size	Storm Lake			
	Resident	Nonresident		
1	15.4	4.5		
2	25.6	39.8		
3	12.8	14.5		
4	16.2	10.9		
5	6.8	8.6		
6 – 10	19.7	13.6		
Over 10	3.4	8.1		

Table 4. Expenses per Household (Storm Lake, $).

	Resident		Nonresident	
	Single day	**Multiple days**	**Single day**	**Multiple days**
Supplies	17.2 (41.5) [300, 0]	67.1 (82.7) [300, 0]	12.3 (31.8) [300, 0]	103.0 (573) [6000, 0]
Food and Beverages	13.3 (29.5) [200, 0]	123.1 (221.8) [1000, 0]	12.6 (21.7) [150, 0]	73.7 (152.3) [1500, 0]
Gas and Car Expenses	5.9 (14.0) [100, 0]	36.0 (96.6) [550, 0]	7.5 (13.8) [70, 0]	34.7 (97.4) [1000, 0]
Lodging	0.7 (5.4) [50, 0]	65.5 (91.3) [500, 0]	4.4 (22.2) [180, 0]	71.0 (140.7) [980, 0]
Shopping	10.7 (34.9) [200, 0]	14.6 (24.4) [100, 0]	3.2 (12.8) [100, 0]	31.3 (103.9) [1000, 0]
Entertainment	4.3 (16.5) [100, 0]	6.0 (12.2) [50, 0]	0.6 (4.7) [40, 0]	6.7 (24.2) [200, 0]
Others	4.2 (34.2) [300, 0]	8.6 (23.8) [100, 0]	1.3 (6.8) [50, 0]	27.6 (172.4) [1700, 0]

a. Values in parentheses are standard deviations.
b. Values in brackets reflect the maximum and minimum values.

Table 5. Total Number of Visitor Parties (Storm Lake).

	Resident (%)	**Nonresident (%)**	**Total**
Single Day	81,112 (30.4)	150,637 (56.4)	231,749 (86.8)
Multiple Days	12,395 (4.6)	23,018 (8.6)	35,413 (13.2)
Total	**93,5 07 (35)**	**173,655 (65)**	**267,162**

Table 6. Total Expenditures by Parties (Storm Lake) Baseline, 2003.

	Resident (%)	Nonresident (%)	Total
Single Day	$4,566,605 (20.0)	$6,311,690 (27.6)	$10,878,295 (47.6)
Multiple Days	$3,977,55 (17.4)	$8,010,264 (35.0)	$11,987,819 (53.4)
Total	**$8,544,160 (37.4)**	**$14,321,954 (62.6)**	**$22,866,144**

Table 7. Total Expenditures by Households (Storm Lake), Improved lake scenario.

	Resident (%)	Nonresident (%)	Total
Single Day	$3,780,000 (20.0)	$5,216,400 (27.6)	$8,996,400 (47.6)
Multiple Days	$3,288,600 (17.4)	$6,615,000 (35.0)	$9,903,600 (53.4)
Total	**$7,068,600 (37.4)**	**$11,831,400 (62.6)**	**$18,900,000**

Table 8. Allocation of New Shopping Dollars (Storm Lake, $).

			Nonresident	
	Avg. Sales per establishment $000	**Total Sales $000**	**%**	**New establishments**
Groceries and Supplies		4,914.00	.26	1
Food and Drinking	390.554	5,481.00	.29	13
Gas and Car Expenses	397.554	2,079.00	.11	5
Lodging	New Lodge 534.032	1,740. 1,760	.116 .068	1 2
Shopping and Entertainment	619.785	2,929.50	.155	5
Total		$18,900.0	1.00	27

Table 9. Economic Impact of Storm Lake Development, Summer 6 months ($).

Industry	Sales	Income	Value added	Jobs
Agriculture	63,724	7,856	12,536	0.3
Utilities	168,547	39,917	108,860	0.2
Construction	68,327	22,895	19,352	1.0
Manufacturing	454,696	69,537	92,931	2.6
Transportation & warehousing	511,813	213,697	325,725	5.9
Retail trade	7,212,500	3,010,909	4,053,213	182.5
Information services	317,337	64,464	90,641	3.5
Finance, insurance & real estate	478,998	105,821	309,607	6.3
Professional and technical services	742,540	399,959	506,637	14.4
Other services	6,562,055	2,505,143	3,382,660	198.7
Government	506,854	27,408	361,697	0.9
Total	17,087,390	6,467,607	9,263,858	416.3

Table 10. Economic Impact of Storm Lake Development, Winter 6 months ($).

Industry	Sales	Income	Value added	Jobs
Agriculture	31,862	3,928	6,268	0.1
Utilities	84,274	19,959	54,430	0.1
Construction	34,164	11,447	9,676	0.5
Manufacturing	227,348	34,769	46,466	1.3
Transportation & warehousing	255,906	106,848	162,863	3.0
Retail trade	3,606,250	1,505,455	2,026,606	91.3
Information services	158,669	32,232	45,321	1.8
Finance, insurance & real estate	239,499	52,911	154,803	3.1
Professional and technical services	371,270	199,979	253,318	7.2
Other services	3,281,028	1,252,572	1,691,330	99.4
Government	253,427	13,704	180,849	0.5
Total	8,543,695	3,233,804	4,631,929	208.1

Table 11. Economic Impact of Storm Lake Development, Total ($).

Industry	Sales	Income	Value added	Jobs
Agriculture	105,879	13,053	20,829	0.4
Utilities	280,046	66,324	180,873	0.3
Construction	113,528	38,040	32,154	1.7
Manufacturing	755,489	115,538	154,408	4.3
Transportation & warehousing	850,389	355,062	541,201	9.9
Retail trade	11,983,745	5,002,700	6,734,512	303.3
Information services	527,264	107,108	150,603	5.9
Finance, insurance & real estate	795,867	175,825	514,419	10.4
Professional and technical services	1,233,748	664,541	841,789	23.9
Other services	10,903,016	4,162,357	5,620,372	330.2
Government	842,150	45,539	600,969	1.6
Total	28,391,117	10,746,088	15,392,127	691.6

Table 12. Employment (Jobs) by Industry, Dickinson County.

Year	1990	1995	2000	2001
Total full- and part-time employment	9,231	11,579	12,830	12,686
Farm employment	721	615	542	
Nonfarm employment	8,510	10,964	12,288	
Nonfarm private employment	7,503	9,871	11,116	
Ag. Serv., forestry, fishing, and other 3/	148	171	236	
Mining	28	34	50	
Construction	412	662	823	
Manufacturing	1,569	2,485	2,415	
Transportation and public utilities	148	316	423	
Wholesale trade	233	340	309	
Retail trade	2,066	2,477	2,779	
Finance, insurance, and real estate	599	736	964	
Services	2,300	2,650	3,117	
Government and govt. enterprises	1,007	1,093	1,172	
Federal, civilian	61	59	66	
Military	85	77	77	
State	75	62	58	
Local	786	895	971	

Table 13. Personal Income and Payroll by Industry, Dickinson County.

Year	1990	1995	2000	2001
Total earnings by place of work	158,067	221,515	297,532	285,661
Farm earnings	13,453	10,640	8,927	(N)
Nonfarm earnings	144,614	210,875	288,605	(N)
Nonfarm private earnings	124,362	184,431	254,621	(N)
Ag. Services, forestry, and fishing 8/	1,659	1,714	2,023	(N)
Mining	666	1,036	2,097	(N)
Construction	9,589	13,226	25,056	(N)
Manufacturing	41,917	64,558	82,430	(N)
Transportation and public utilities	3,923	9,560	11,292	(N)
Wholesale trade	5,975	10,003	11,679	(N)
Retail trade	22,110	29,514	40,093	(N)
Finance, insurance, and real estate	6,402	12,175	18,895	(N)
Services	32,121	42,645	61,056	(N)
Government and govt. enterprises	20,252	26,444	33,984	(N)
Federal, civilian	2,085	2,504	3,084	(N)
Military	798	844	1,086	(N)
State government	1,910	1,851	2,088	(N)
Local government	15,459	21,245	27,726	(N)

Table 14 Percentage Increases in Personal Income and Earnings, Dickinson and Buena Vista Counties

	1990-2000 Growth: Dickinson County	B.Vista County	Proj. 2010 Growth: B.Vista Scen. A	B.Vista Scen. B
Total Personal Inc.	74.5	48.8	5.9	25.7
Total Earnings	88.1	54.7	7.5	33.3

Table 15 Current and Projected Income Levels, Buena Vista County
$1,000

Code	Label	1990	2000	2002	2010	2010A	2010B
10	Personal income	323,847	482,149	499,317	717,437	759,765	901,818
20	Population (persons)			20,275			
30	Per capita personal income (dollars)			24,627			
40	Earnings by place of work	225,036	346,732	357,148	536,394	576,623	715,013
41	less: Contributions for govt social ins.			40,889			
42	plus: Adjustment for residence			-14,299			
45	equals: Net earnings by place of resid			301,960			
46	plus: Dividends, interest, and rent			107,927			
47	plus: Pers. current transfer receipts			89,430			
50	Wage and salary disbursements			253,702			
60	Supplements to wages and salaries			53,388			
70	Proprietors' income			50,058			
71	Farm proprietors' income			17,729			
72	Nonfarm proprietors' income			32,329			
81	Farm earnings			22,546			
82	Nonfarm earnings			334,602			
90	Private earnings	159,089	267,844	280,480	491,307	528,147	654,903
100	Forestry, fishing, related activities			8,179			
300	Utilities			3,307			
400	Construction			10,004			
500	Manufacturing			100,172			
600	Wholesale trade			23,422			
700	Retail trade			28,326			
800	Transportation and warehousing			7,164			
900	Information			2,884			
1000	Finance and insurance			20,333			
1200	Professional and technical services			57,781			
1900	Other services, except public administration			18,908			
2000	Government and government enterprises			54,122			
82	Nonfarm earnings			334,602			

Source: Bureau of Economic Analysis

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