

Gaming Revenue Projections for the Southeast Gaming Zone of Kansas

Presentation to Lottery Gaming Facility Review Board
by Will Cummings / Cummings Associates

July 24, 2008

Will E. Cummings
Cummings Associates

Questions, Please!
(at any time)

Overview

- Process (in brief)
- Cummings Projections
- Differences from Penn National (Morowitz) Projections
- Key Difference: Spending vs. Distance
- The Evidence
- My Conclusion: Distance Matters

Gravity Models –

- Science?
- Theory?
- Facts?

Gravity Models –

- Science?
- Theory?
- Facts?
- *All of the Above*

“Gravity Models” – Overview

- Location
- Location
- Size
- Everything Else

Gravity Model(s) Updated

- Separate Slot / Table Models
- Precise Locations
- Precise Sizes
- Everything Else . . .

“Power Ratings”

Precise Locations and Sizes

Exhibit 9: Portion of Model Inputs

Kansas Slot Estimates

Average Distances:

State	County / ZIP	Woodlnds	KCK Spdway	KCK stateline	KCK middle	SE Camptn	SE Corner	SE Galena	Sumner Mulvane	Sumner Well'n	Dodge City	White Cloud	Horton	Mayetta
KS	Allen / 66732	102	100	107	103	43	74	89	128	137	283	155	142	122
KS	Allen / 66748	112	110	117	113	56	88	81	114	123	248	154	134	113
KS	Allen / 66749	103	101	109	105	61	92	87	121	131	253	146	127	106
KS	Allen / 66751	101	98	106	102	56	87	82	125	135	257	145	130	110
KS	Allen / 66755	93	91	98	94	51	82	77	134	144	267	146	134	114
KS	Allen / 66772	108	104	111	107	40	70	65	126	135	262	159	146	126
KS	Anderson / 66014	69	67	74	70	61	94	89	156	166	285	132	121	102
KS	Anderson / 66015	92	90	98	94	68	99	94	130	140	259	135	118	97
KS	Anderson / 66032	74	71	79	75	76	108	103	147	158	274	121	107	88
KS	Anderson / 66033	64	61	69	65	77	110	104	157	168	283	117	106	87
KS	Anderson / 66039	82	79	86	82	60	92	87	143	153	273	136	123	104
KS	Anderson / 66091	83	81	89	85	71	103	97	138	149	267	128	113	93
KS	Anderson / 66093	90	88	96	92	77	108	103	129	140	258	131	110	89
KS	Atchison / 66002	40	42	51	49	158	191	185	226	239	339	35	31	44
KS	Atchison / 66016	43	44	54	52	158	191	185	214	227	327	36	27	32
KS	Atchison / 66023	50	52	62	60	164	196	191	207	220	319	39	20	24
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
KS	Wyandotte / 66108	9	8	8	7	113	146	140	215	227	335	84	79	65
KS	Wyandotte / 66109	7	7	11	9	120	153	147	216	228	335	76	70	57
KS	Wyandotte / 66111	7	7	8	7	115	148	142	216	228	335	82	76	63
KS	Wyandotte / 66112	7	7	9	7	117	150	145	216	228	335	79	73	60
KS	Wyandotte / 66118	12	11	7	7	117	147	141	223	234	342	86	81	69

Total KS

Exhibit 9: Portion of Model Inputs

Kansas Slot Estimates

Average Distances:

State	County / ZIP	Woodlnds	KCK Spdway	KCK stateline	KCK middle	Camptrn	Penn Cherokee	Harrahs Mulvans	Penn Well'n	Marvel Well'n	Dodge City	White Cloud	Horton	Mayetta
KS	Allen / 66732	102	100	107	103	41	76	130	138	139	283	155	142	122
KS	Allen / 66748	112	110	117	113	54	88	115	124	125	248	154	134	113
KS	Allen / 66749	103	101	109	105	59	93	122	131	132	253	146	127	106
KS	Allen / 66751	101	98	106	102	54	89	126	135	136	257	145	130	110
KS	Allen / 66755	93	91	98	94	48	84	136	145	146	267	146	134	114
KS	Allen / 66772	106	104	111	107	38	72	127	135	136	262	159	146	126
KS	Anderson / 66014	69	67	74	70	59	96	157	167	168	285	132	121	102
KS	Anderson / 66015	92	90	98	94	66	101	131	141	142	259	135	118	97
KS	Anderson / 66032	74	71	79	75	74	110	148	158	159	274	121	107	88
KS	Anderson / 66033	64	61	69	65	75	111	158	169	170	283	117	106	87
KS	Anderson / 66039	82	79	86	82	58	94	144	154	155	273	136	123	104
KS	Anderson / 66091	83	81	89	85	69	105	139	149	150	267	128	113	93
KS	Anderson / 66093	90	88	96	92	75	110	131	141	142	258	131	110	89
KS	Atchison / 66002	40	42	51	49	156	193	228	239	240	339	35	31	44
KS	Atchison / 66016	43	44	54	52	156	192	216	227	228	327	36	27	32
KS	Atchison / 66023	50	52	62	60	161	198	209	220	221	319	39	20	24
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
KS	Wyandotte / 66108	9	8	8	7	111	147	217	228	229	335	84	79	65
KS	Wyandotte / 66109	7	7	11	9	118	155	218	229	230	335	76	70	57
KS	Wyandotte / 66111	7	7	8	7	113	150	217	228	229	335	82	76	63
KS	Wyandotte / 66112	7	7	9	7	116	152	218	229	230	335	79	73	60
KS	Wyandotte / 66118	12	11	7	7	115	148	224	235	236	342	86	81	69

Total KS

Updated “Power Ratings”

“Everything Else” 1

- Micro-Access
- Spaciousness
- Slot Mix
- Fit & Finish
- Management
- Marketing / Player Rewards

“Everything Else” 2

- Hotel
- Structured Parking
- Variety of Dining Choices
- Retail
- Entertainment
- “Brand”

Updated “Power Ratings”

Exhibit 2: Gaming-Device "Power Ratings"

(Total Annual Spending versus benchmark of \$700)

Large Urban Markets		Smaller Cities & Misc. Markets		Rural Markets	
				Deadwood, SD	129.9
				S Dakota Indian avg. (8)	124.7 e
				Upstate Michigan avg.	120.0 e
				Colorado (2)	120.0
				Kansas Natives avg.	116.9 e
		Mississippi / Louisiana	115.5		
Horseshoe / Bluffs Run, IA	113.0			Terribles Lakeside, IA	113.4
				Diamond Jo Worth, IA	113.0
				Iowa Natives average	112.0 e
Ameristar Council Bluffs, IA	111.3				
Midwest Standard +10%					
		Upstate Wisconsin avg.	110.0 e		
		Mt. Pleasant, MI	109.9 e		
Albuquerque, NM avg.	107.4	Metropolis, IL/KY	107.6 o	IOC Marquette, IA	107.1 o
Harrahs Council Bluffs, IA	106.6	Dubuque Greyh Park, IA	106.9		
Harrahs Joliet, IL	106.4 o			Emmetsburg, IA	106.3
		Other New Mexico avg.	105.7		
		IOC Boonville, MO	105.6 o		
		Atlantic City, NJ	104.3		
		Riverside, IA	104.1		
Harrahs NKCMO	103.4			Wisconsin Dells	102.1 e
"Midwest Standard"					
		Prairie Meadows, IA	99.6	Mohegan Sun, CT	100.0 o
		IOC Waterloo, IA	99.6		
Ameristar KCMO	98.6				
Michigan City, IN	97.9	Dubuque Riverboat, IA	97.4 o		
Harrahs W St Louis	97.1				
Argosy Riverside, MO	97.1				
Elgin (Chicago) IL	96.0 o	Argosy Sioux City, IA	96.3 o		
Joliet Empress, IL	95.3 o			Foxwoods, CT	95.6 o
		Niagara (NY) casino	94.6		
		IOC Bettendorf, IA	94.0 o		
East St Louis, IL	93.7 o	Southern Delaware	93.7		

Exhibit 4: Table-Game "Power Ratings"

(Total Annual Spending versus benchmark of \$95)

Large Urban Markets		Smaller Cities & Misc. Markets		Rural Markets	
Hammond, IN	114.7 o	Metropolis, IL/KY	118.9 o	Iowa Natives average	113.7 e
Albuquerque, NM avg.	113.1 ±				
Resorts, E Chicago IN	112.6 o				
Harrahs Joliet, IL	110.5 o				
Elgin (Chicago) IL	110.5 o			Kansas Natives avg.	110.5 e
Midwest Standard +10%					
Michigan City, IN	108.4				
Louisville, KY/IN	108.4 o				
		Upstate Wisconsin avg.	105.3 e		
Aurora (Chicago), IL	104.2 o			Diamond Jo Worth, IA	104.2
Joliet Empress, IL	102.1 o			Caruthersville, MO	102.1
Cincinnati (avg), OH/IN	101.8 o				
Majestic Star, Gary IN	101.1 o				
Detroit (avg / 3 facils)	100.0 o				
Horseshoe / Bluffs Run, IA	100.0			Terribles Lakeside. IA	100.0
"Midwest Standard"					
		Riverside, IA	97.9	Wisconsin Dells	97.9 e
		Other New Mexico avg.	97.4 ±	Emmetsburg, IA	97.9
Ameristar Council Bluffs, IA	96.8			French Lick, IN	96.8
Harrahs NKCMO	94.7 b				
Harrahs W St Louis	91.6 b	IOC Boonville, MO	91.6 b o		
Midwest Standard -10%					

Horseshoe / Bluffs Run, IA	100.0			Terribles Lakeside. IA	100.0
"Midwest Standard"					
		Riverside, IA	97.9	Wisconsin Dells	97.9 e
		Other New Mexico avg.	97.4 ±	Emmetsburg, IA	97.9
Ameristar Council Bluffs, IA	96.8			French Lick, IN	96.8
Harrahs NKCMO	94.7 b				
Harrahs W St Louis	91.6 b	IOC Boonville, MO	91.6 b o		
Midwest Standard -10%					
East St Louis, IL	88.4 o				
Argosy Riverside, MO	87.4 b	Evansville, IN	87.4 o		
		Argosy Sioux City, IA	87.4 o		
Ameristar KCMO	86.3 b				
Harrahs Council Bluffs, IA	86.3				
		Dubuque Greyh Park, IA	85.3		
		Prairie Meadows, IA	83.2		
		IOC Waterloo, IA	83.2		
				IOC Marquette, IA	82.1 o
Ameristar St Chas, MO	81.1 b	Green Bay, WI	81.1 e		
		Catfish Bend Burlington, IA	78.9		
		St Jo MO	72.6 o		
Admiral / downtown St Louis	71.6 b o				
Milwaukee, WI	71.6 e o	Peoria, IL	71.6 o		
		Dubuque Riverboat, IA	70.5 o		
IOC KCMO	69.5 b o	IOC Bettendorf, IA	67.4 o		
		Mark Twain, MO	67.4 b o		
		Clinton, IA	67.4 o		
				Deadwood, SD	64.2 b
		Jumers Rock Island, IL	58.9 o	S Dakota Indian avg. (8)	57.9 e
		Rhythm City, IA	48.4 o		
				Colorado (2)	35.8 b

e = estimated

o = old boat or capacity-constrained market

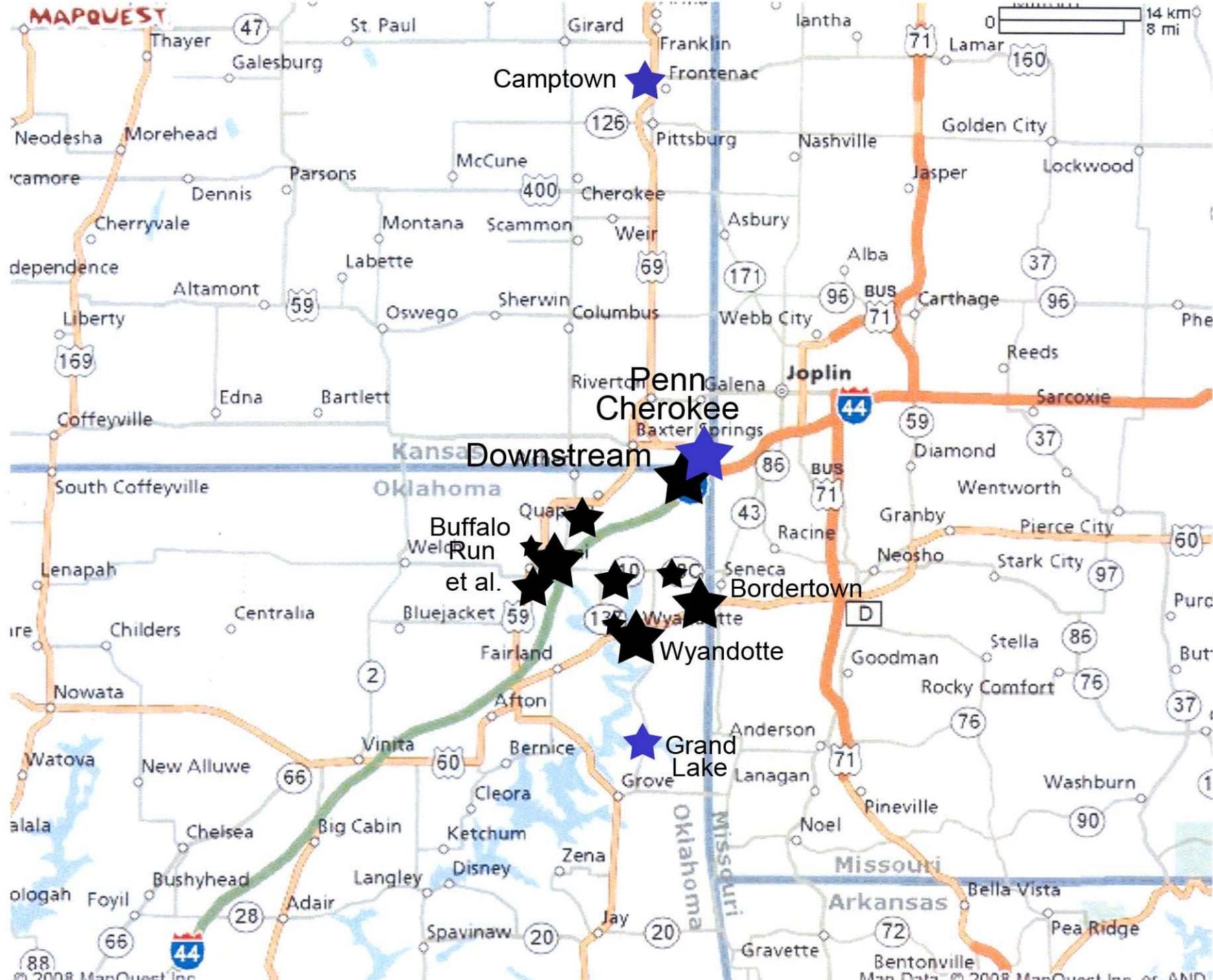
b = betting limits

Exhibit 5: Assumptions for Kansas Projections

	Kansas City	Harrah's Mulvane	Marvel Wellington	Penn Wellington	Penn Cherokee	Dodge
Slot Performance						
High	107.0	110.0	116.0	116.0	107.0	117.0
Baseline	102.0	104.0	110.0	110.0	102.0	112.0
Low	97.0	98.0	104.0	104.0	97.0	107.0
Table Performance						
High	107.0	106.0	108.0	103.0	95.0	105.0
Baseline	102.0	98.0	100.0	95.0	90.0	100.0
Low	97.0	90.0	92.0	87.0	85.0	95.0

Note: 100 = "Midwest Standard." Higher slot baseline here typical of new facilities.

Southeast Zone



Cummings Projections:

	900 slots	1,400 slots*
“High”	\$39.0	x
Baseline	\$32.0	\$45.3
“Low”	\$23.2	x

(all in 2007 \$ million for Penn National’s Hollywood Casino)

* And hotel, etc.

Cummings Projections (2007\$)

	900 slots	1,400 slots*
“High”	\$39.0	x
Baseline	\$32.0	\$45.3
“Low”	\$23.2	x

(all in 2007 \$ million for Penn National’s Hollywood Casino)

* And hotel, etc.

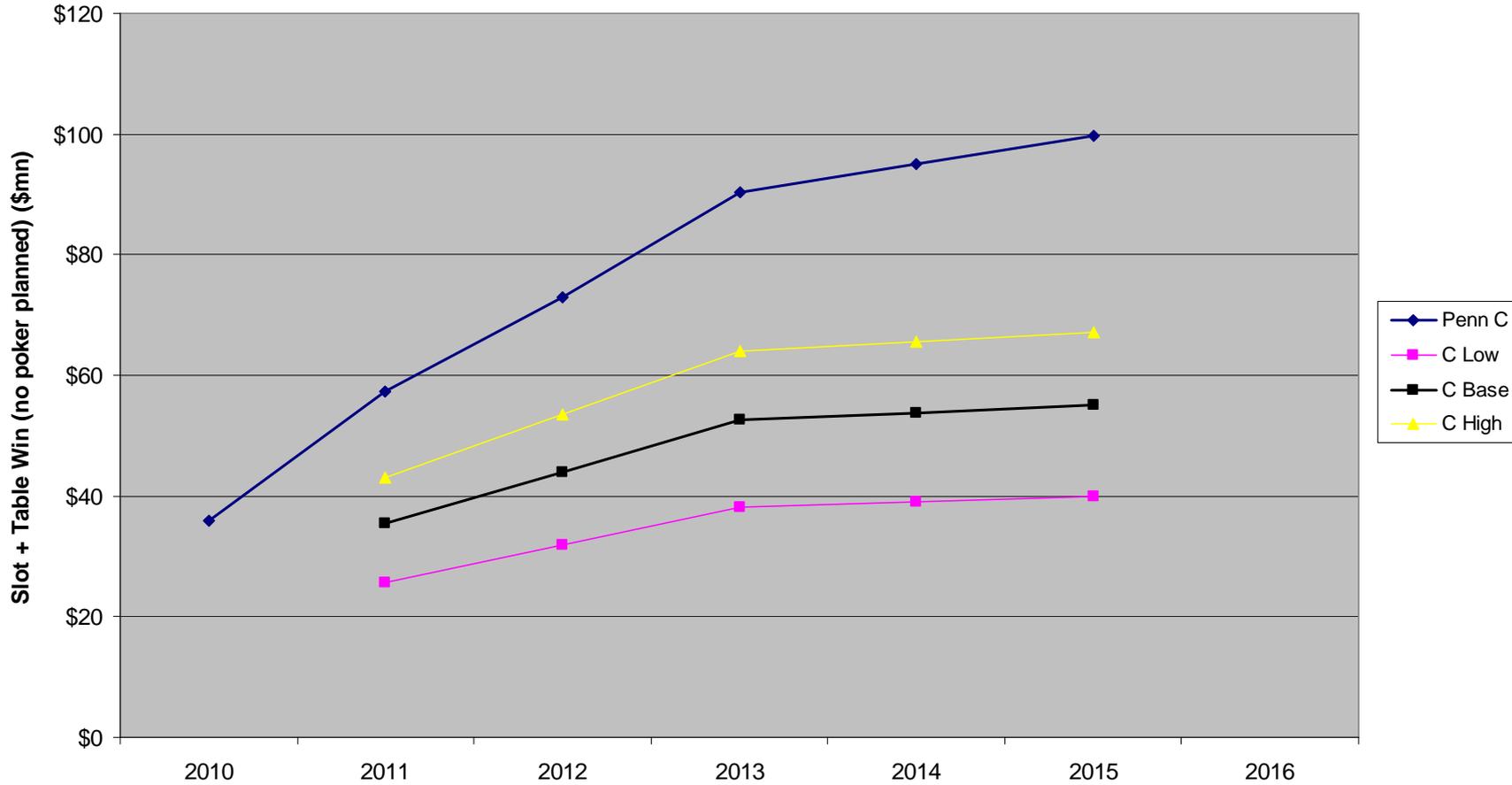
Cummings Projections (2013\$)

	900 slots	1,400 slots*
“High”	\$45.3	x
Baseline	\$37.2	\$52.5
“Low”	\$27.0	x

(all in 2013 \$ million for Penn National’s Hollywood Casino)

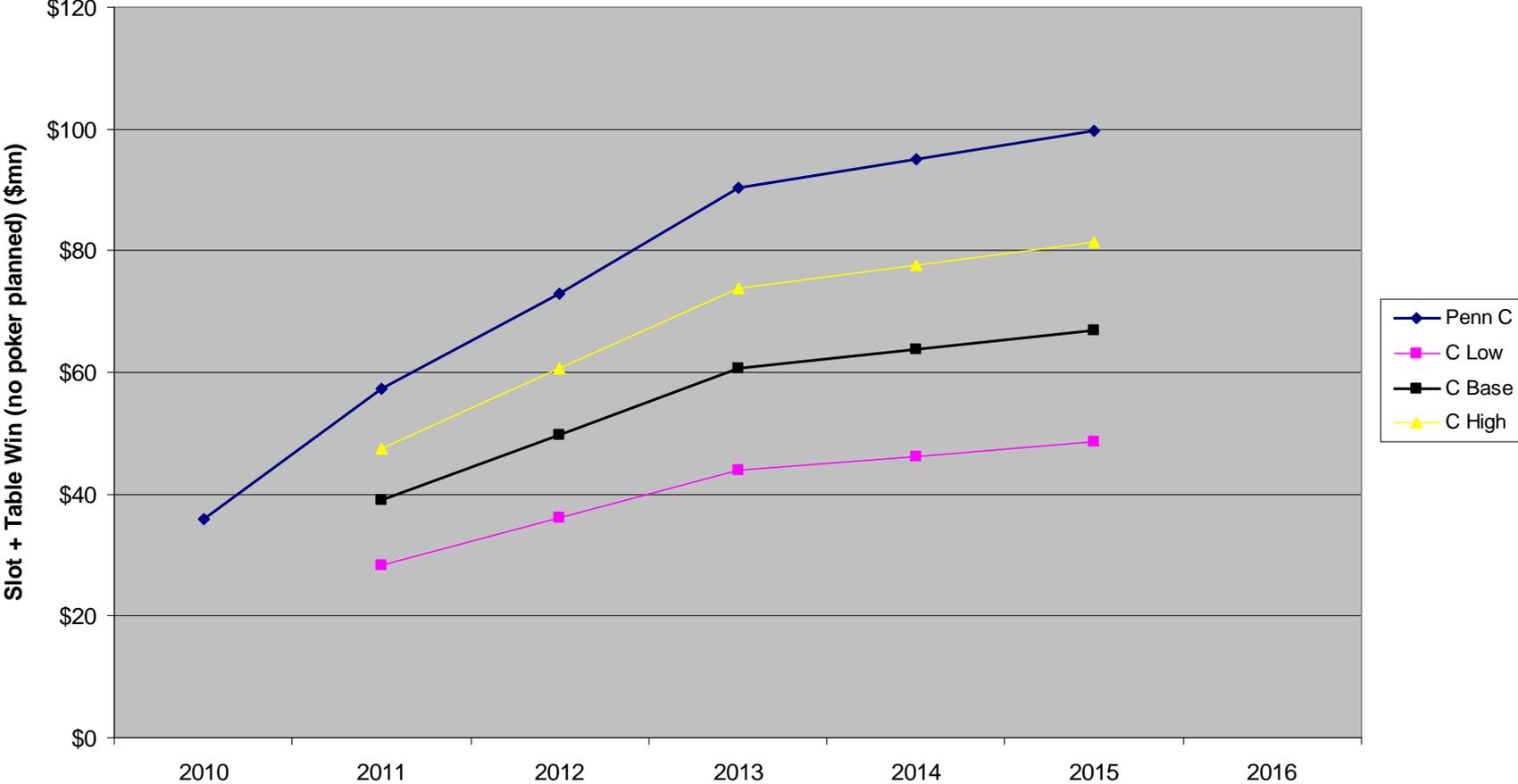
* And hotel, etc.

Exhibit 4: Penn's Cherokee Projections vs. Cummings's (2.5% escalation)



Note: Cummings projections for 2011 are for Phase One 900-slot facility -- for 2013 and later years, for Phase N 1400-slot facility (for 2012, intermediate)

Exhibit 5: Penn's Cherokee Projections vs. Cummings's (5% escalation)



Note: Cummings projections for 2011 are for Phase One 900-slot facility -- for 2013 and later years, for Phase N 1400-slot facility (for 2012, intermediate)

Sources of Difference (2013\$)

	Cummings	Morowitz	Diff.
0-100 miles	\$30.1	\$74.3	\$44.2
100+ miles	\$4.3	\$13.2	\$8.9
Drive-Bys	\$2.8	\$2.9	\$0.1
Area Hotels	<u>\$0.0</u>	<u>\$0.7</u>	<u>\$0.7</u>
Total	\$37.2	\$91.0	\$53.8

(all \$ million)

“Gravity Models” – Overview

- Location
- Location
- Size
- Everything Else

“Gravity Models” – Overview

- Location I
- Location II
- Size
- Everything Else

*Location II:
Reilly's Law*

Reilly's Law:

$$ms \sim S/d^2$$

Where

ms : market share

S : casino size (capacity)

d : distance

Newton's Law:

$$F = m / d^2$$

Where

F : gravitational force

m : mass (of each body)

d : distance

Reilly's Law:

$$ms \sim S/d^2$$

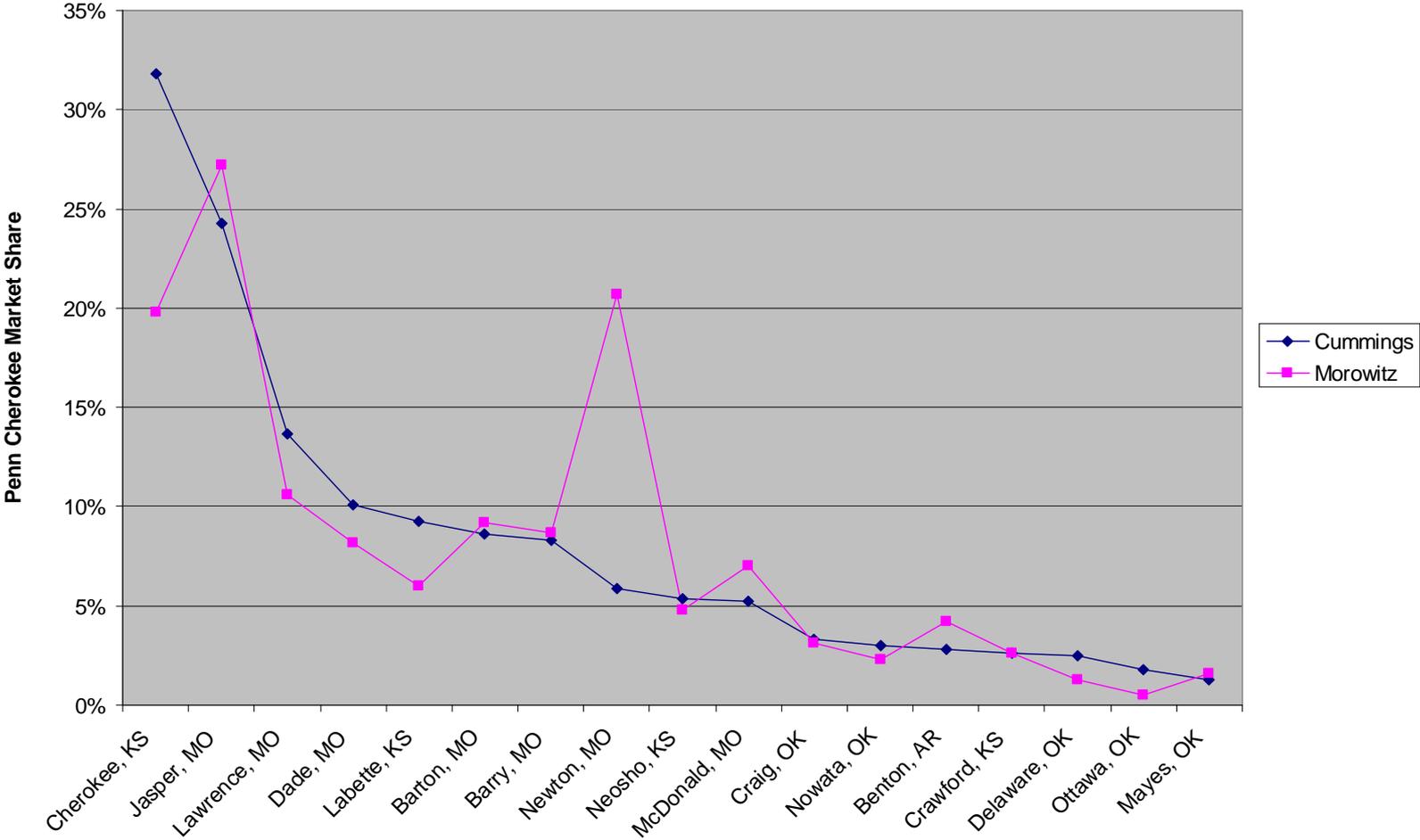
Where

ms : market share

S : casino size (capacity)

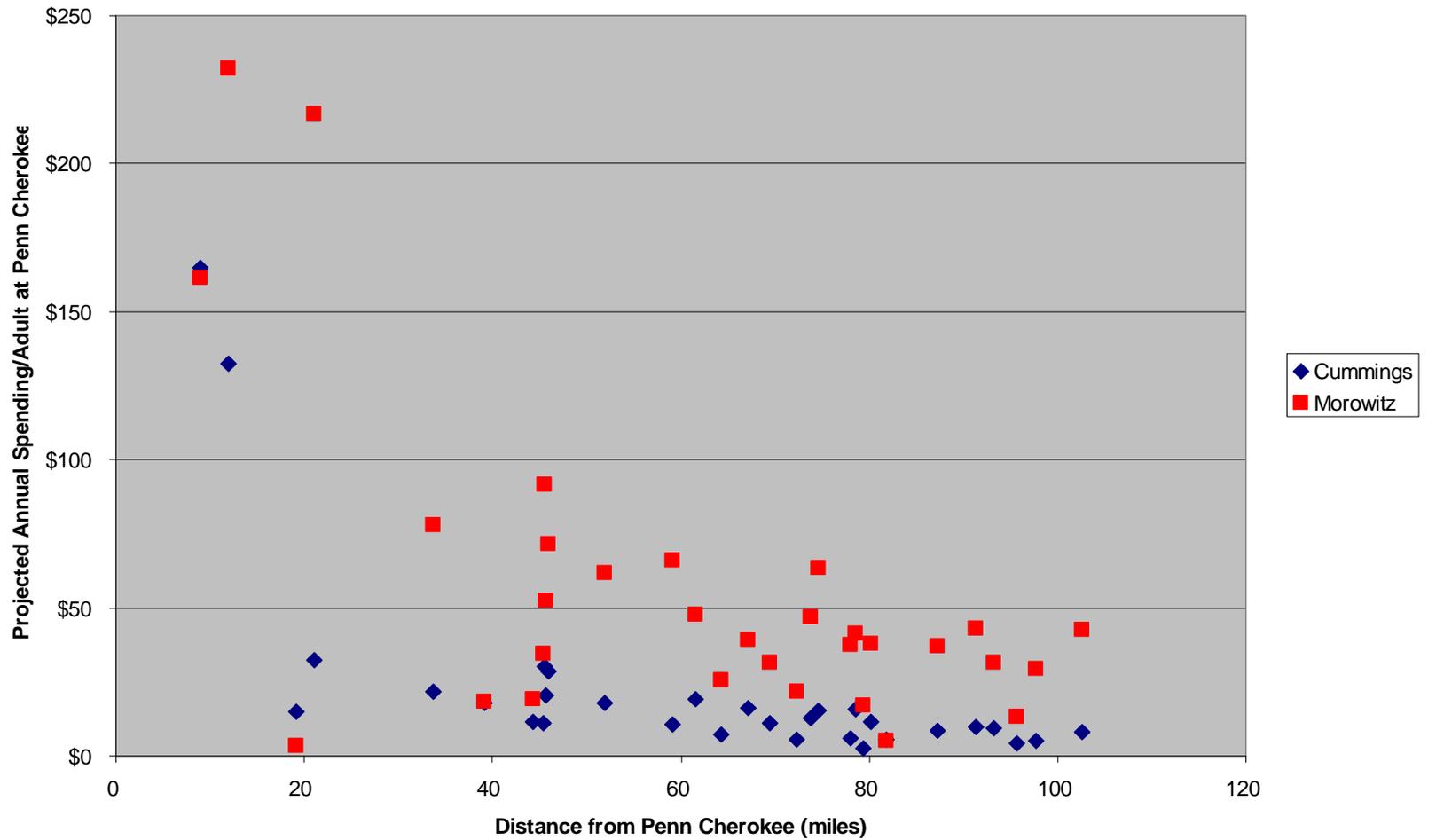
d : distance

Little Difference in Projections for Market Share

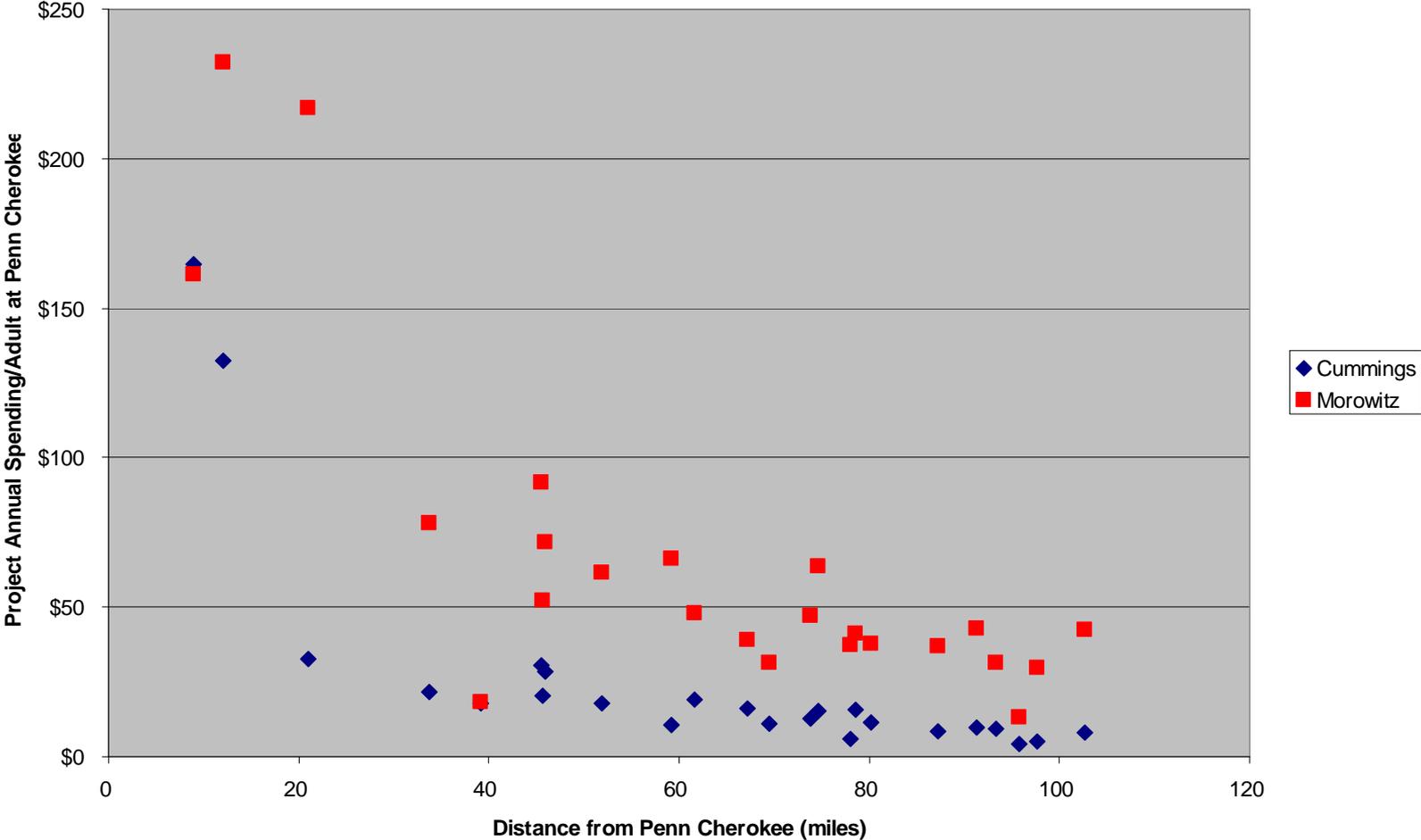


*Location I:
The Closer, the Better*

Substantial Differences in Spending per Adult

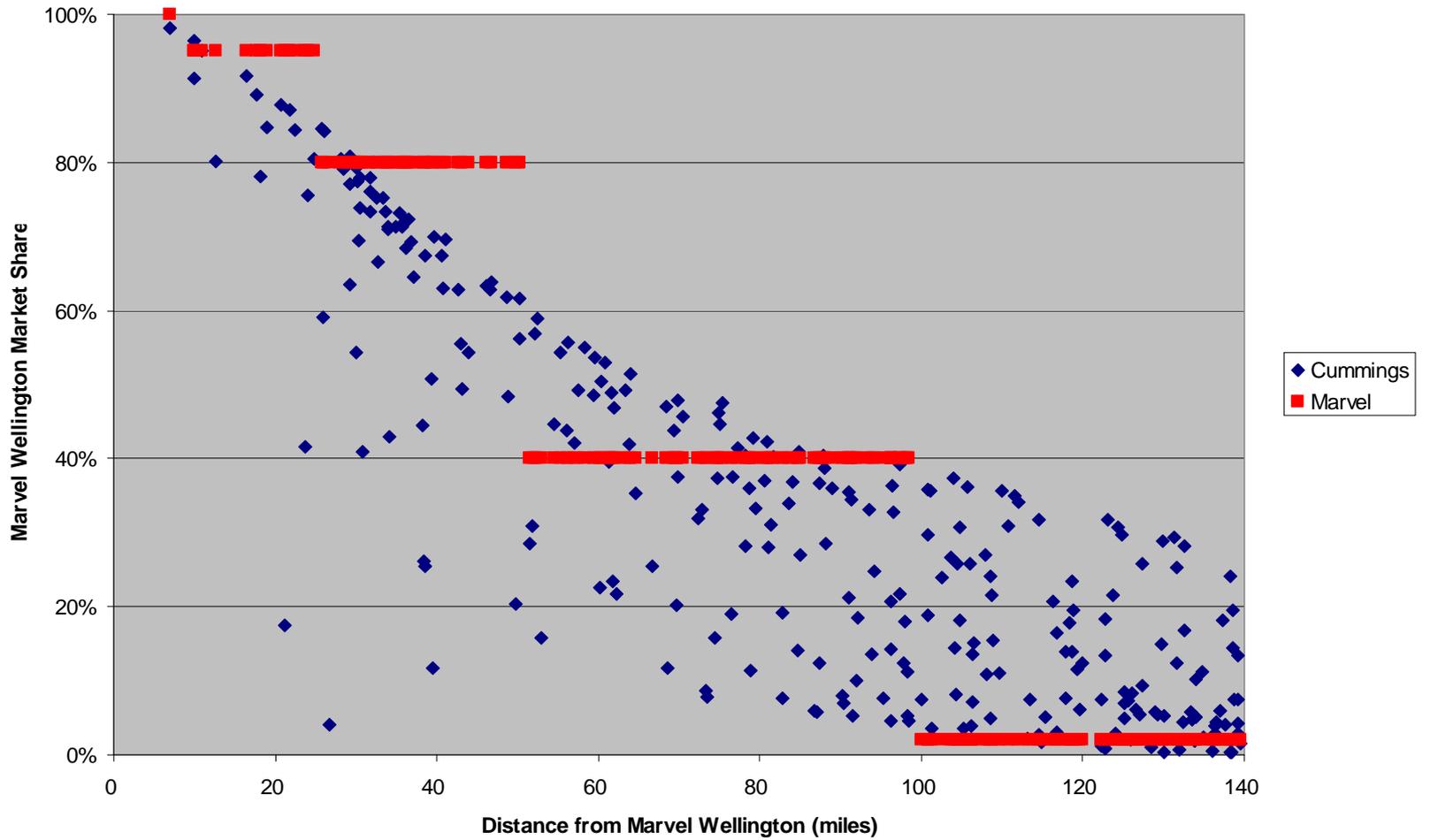


Projected Spending (Oklahoma Counties Omitted)

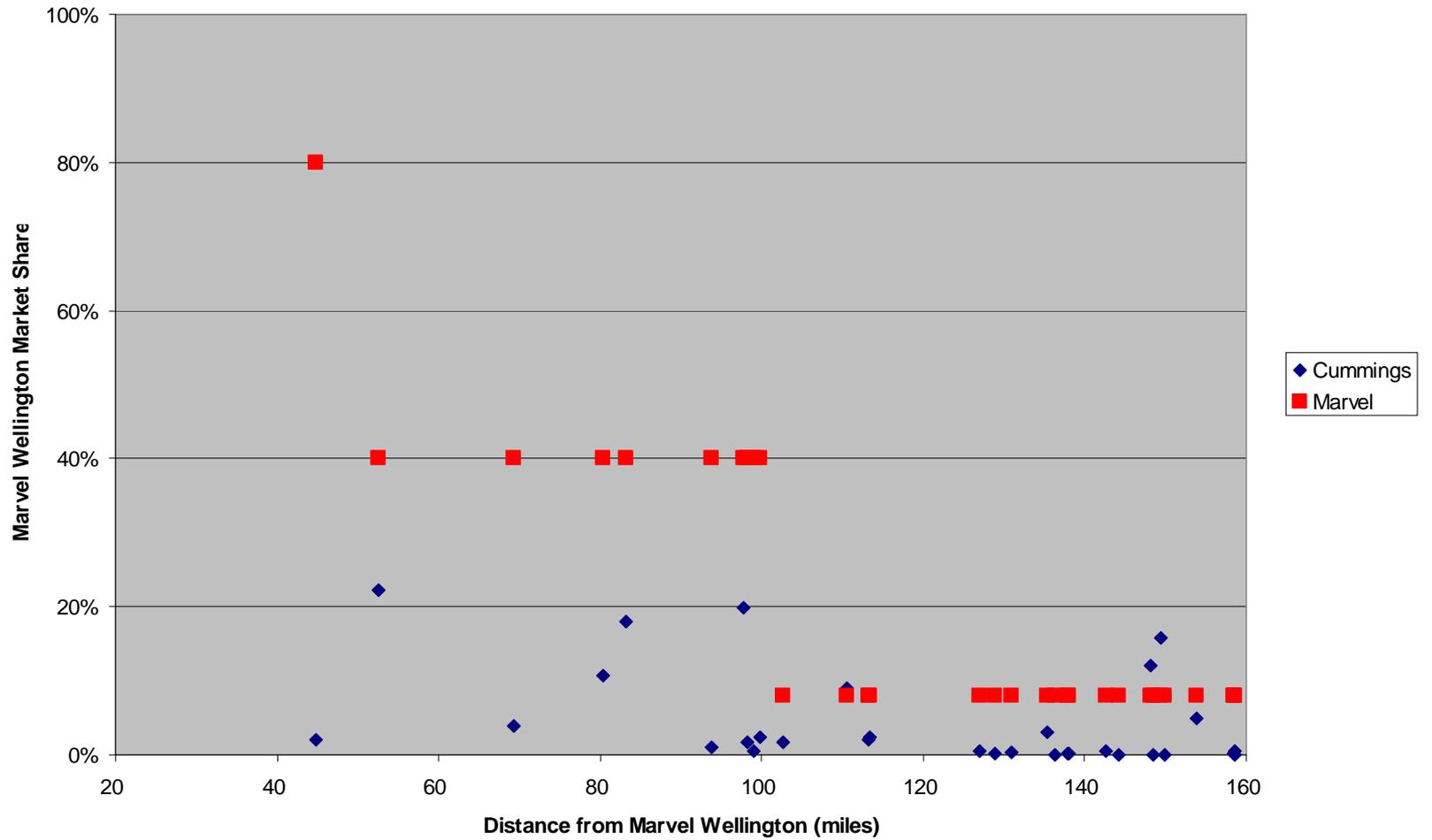


*Similar Divergence of Opinion
in the South-Central Zone*

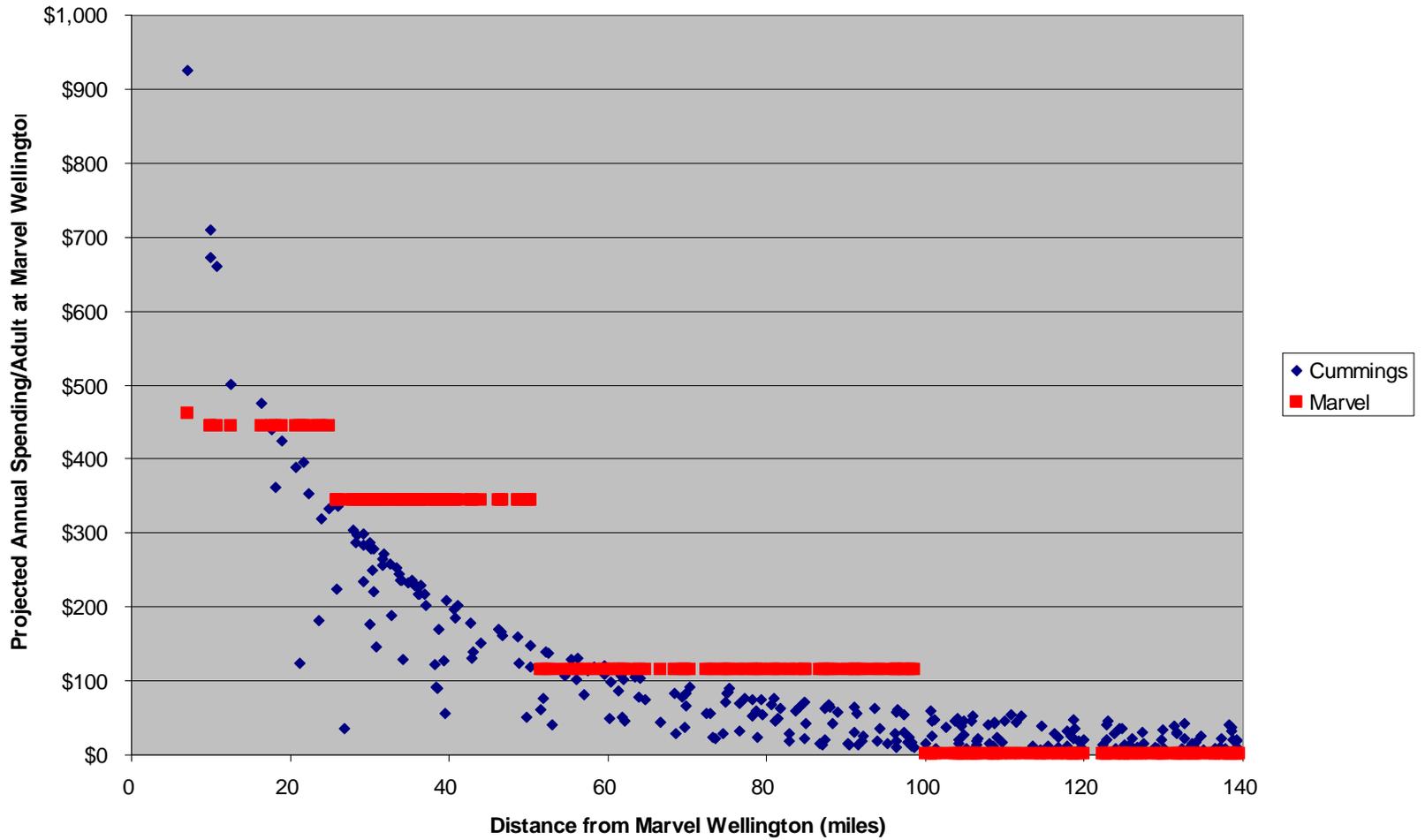
Marvel: Modest Difference in Projections for Market Share -- in Kansas



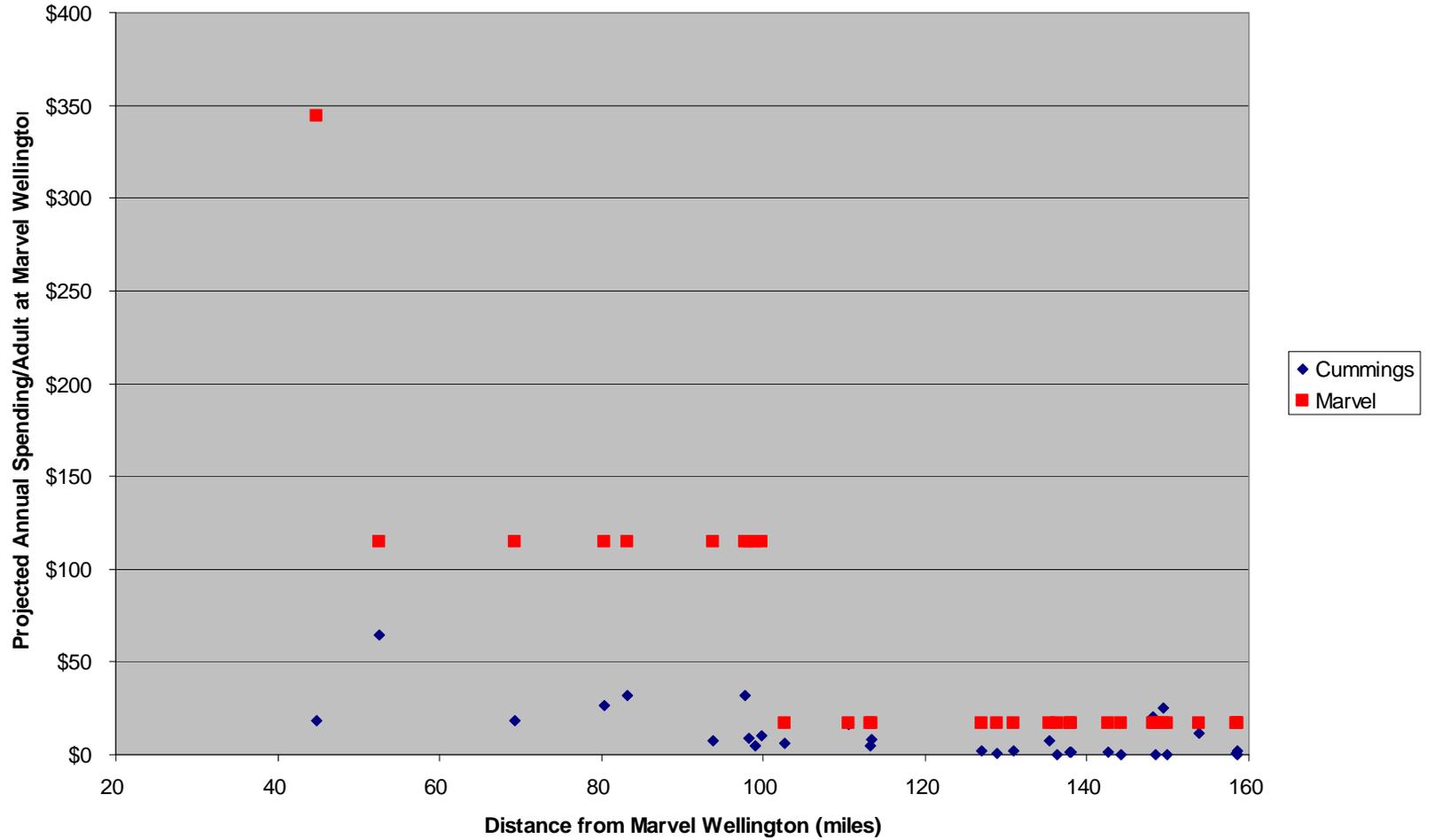
Marvel: Substantial Differences in Market Share in Oklahoma



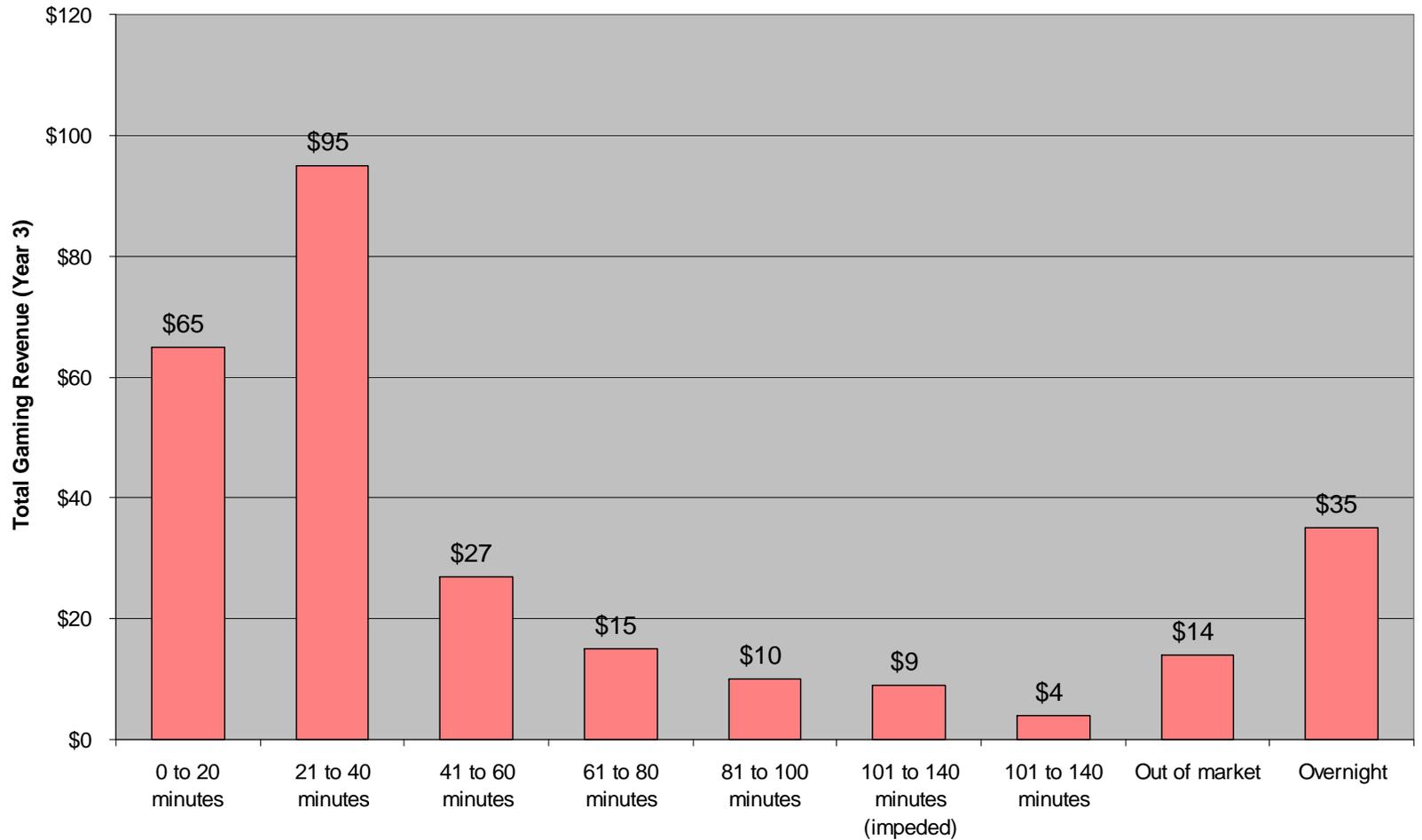
Marvel: More Significant Differences in Projected Spending Per Adult (Kansas)



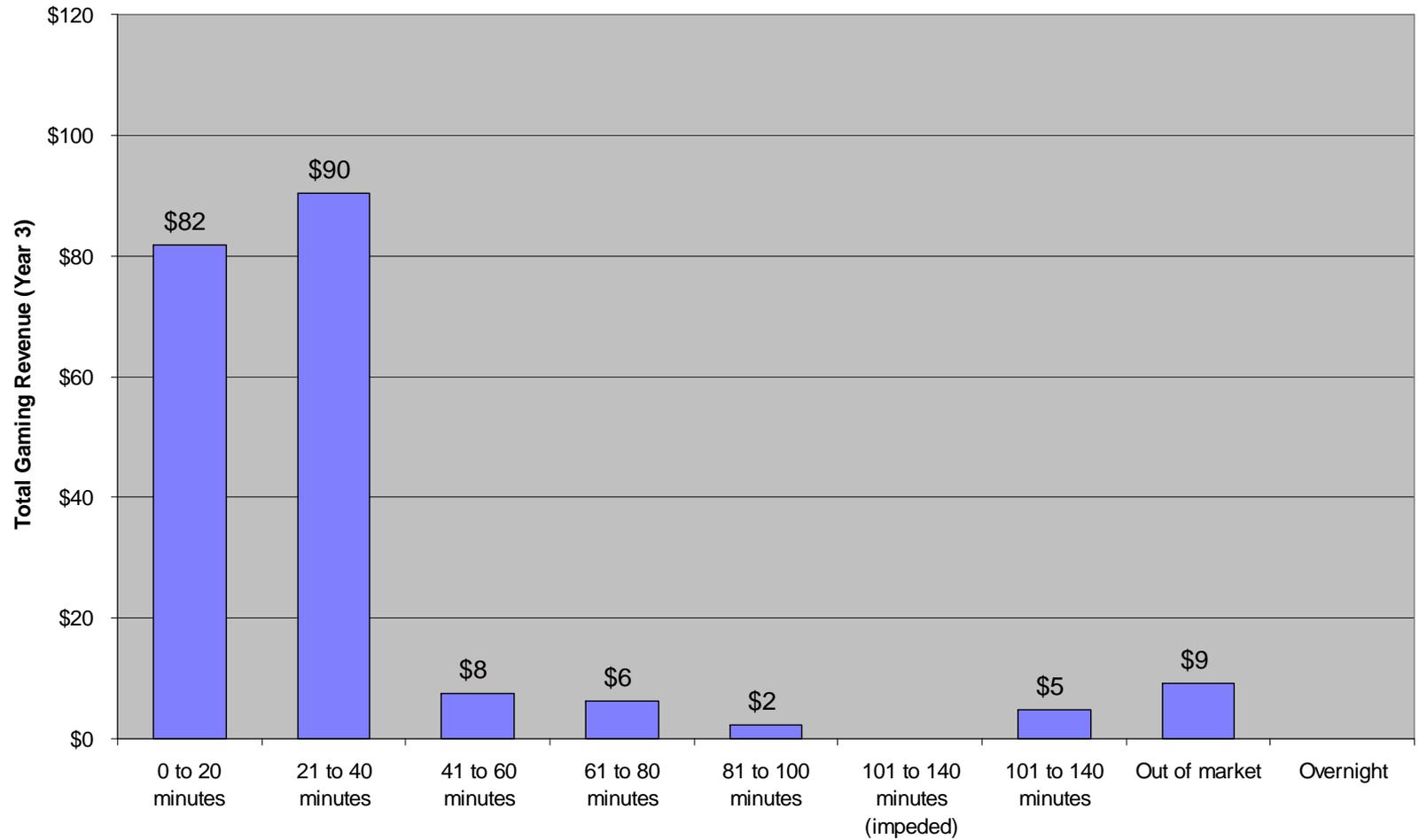
Marvel: Very Large Difference in Projected Spending from Oklahoma



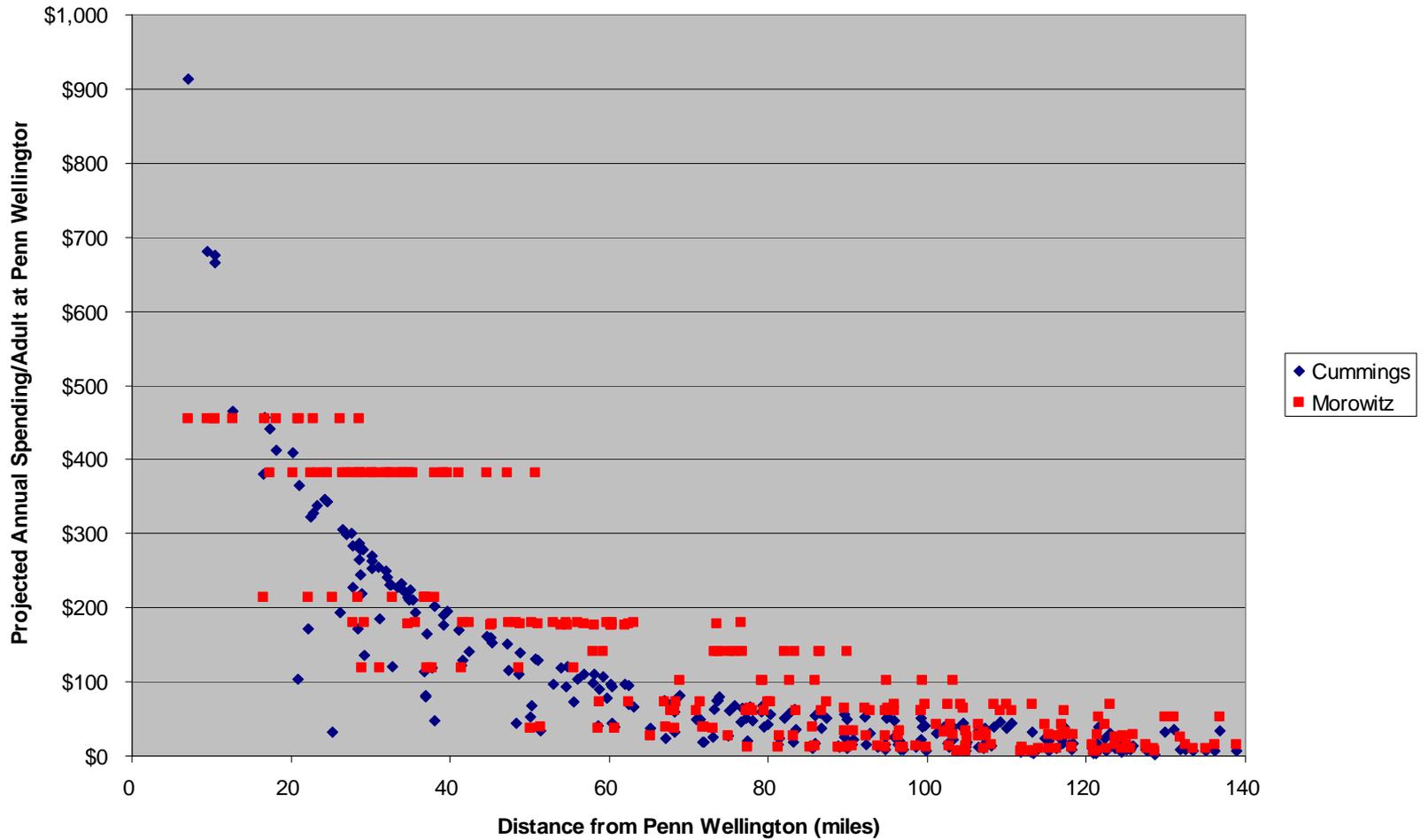
Harrah's Projected Gaming Revenue by Time/Distance Zone (\$ million)



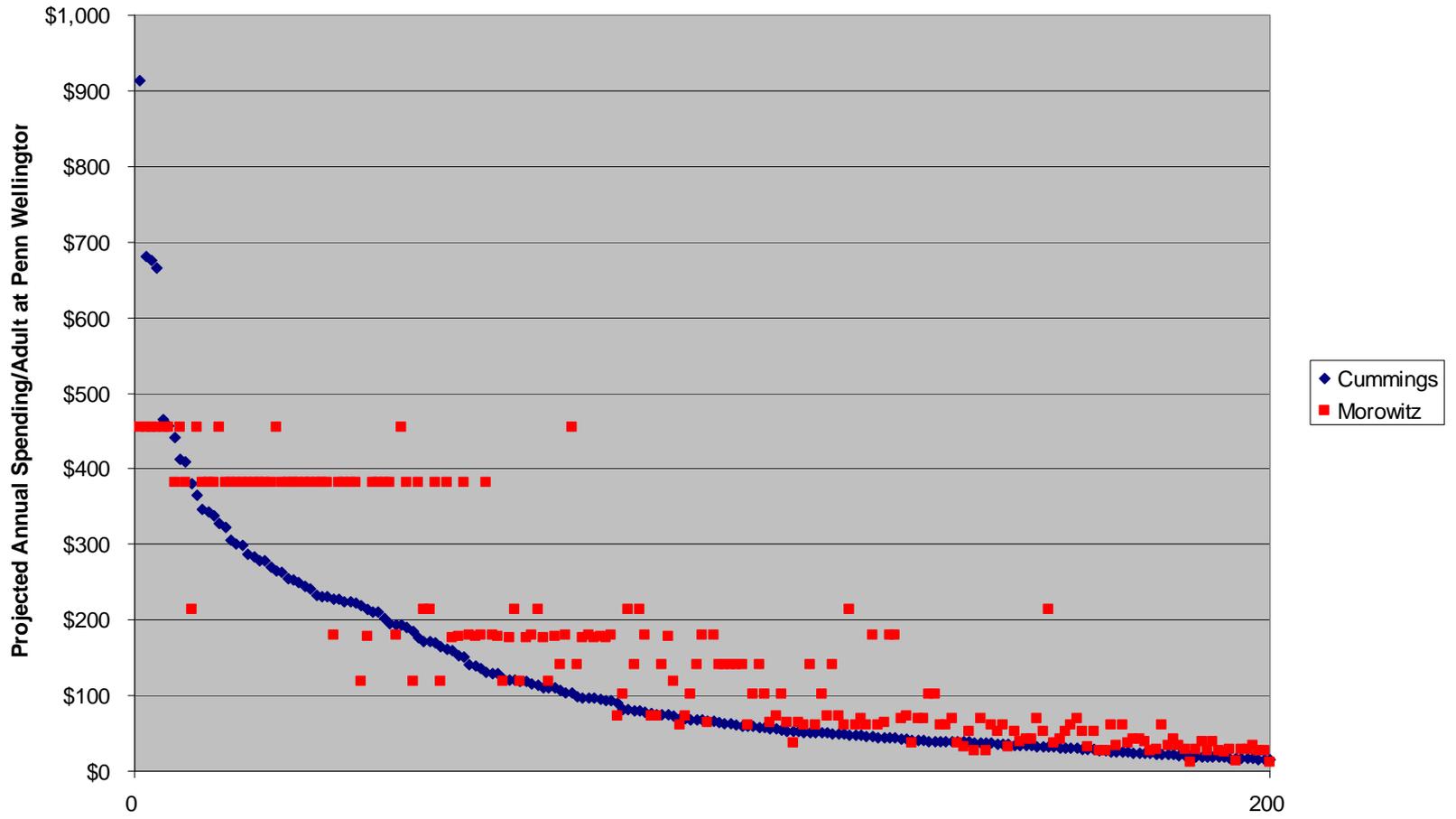
Cummings Projections for Harrah's by Time/Distance Zone (\$ million)



Penn Wellington: Differences in Spending per Adult (Kansas only)

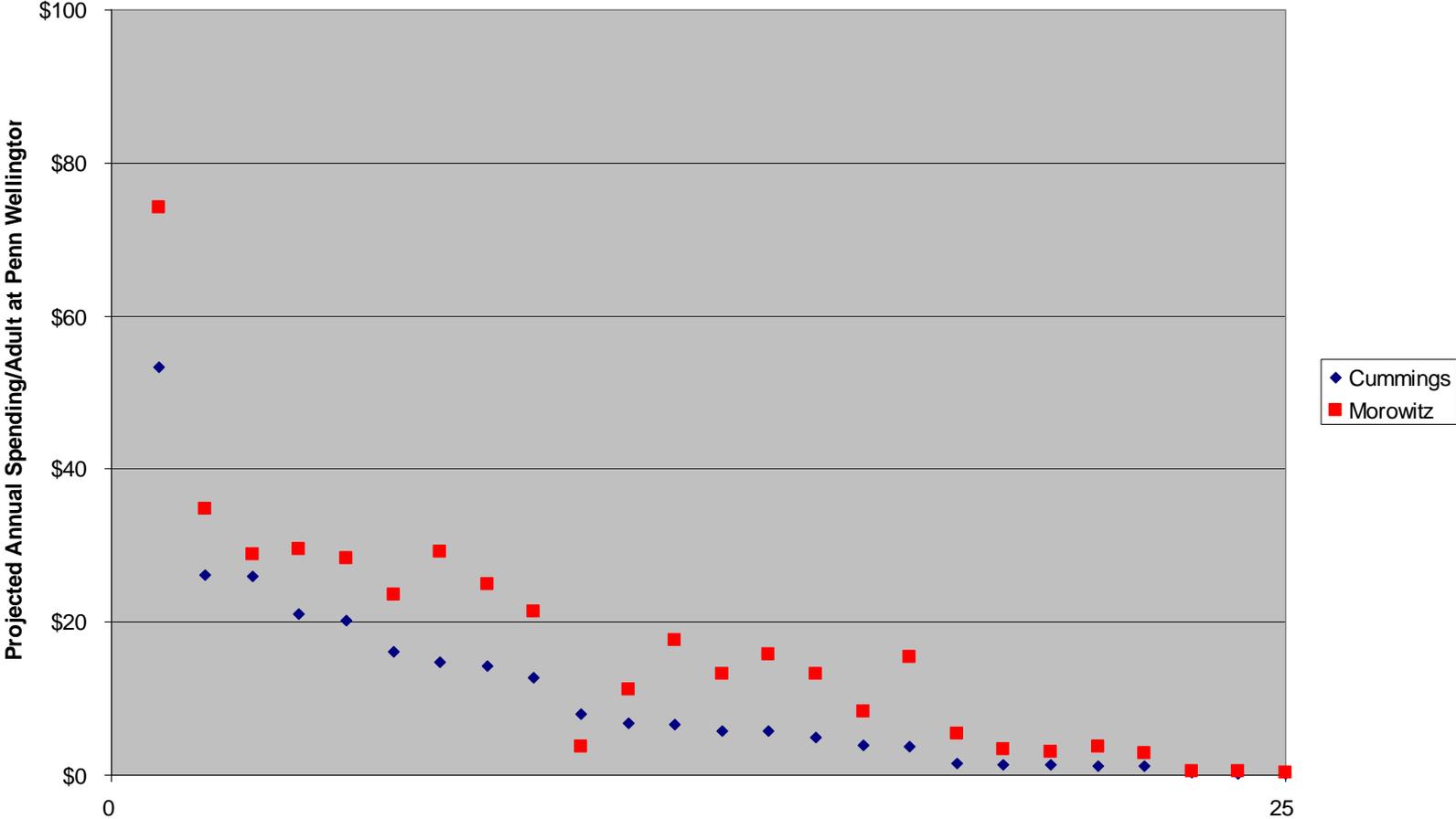


Penn Wellington: Differences in Projected Spending per Adult (Kansas only)



(data sorted not by distance but by Cummings projection)

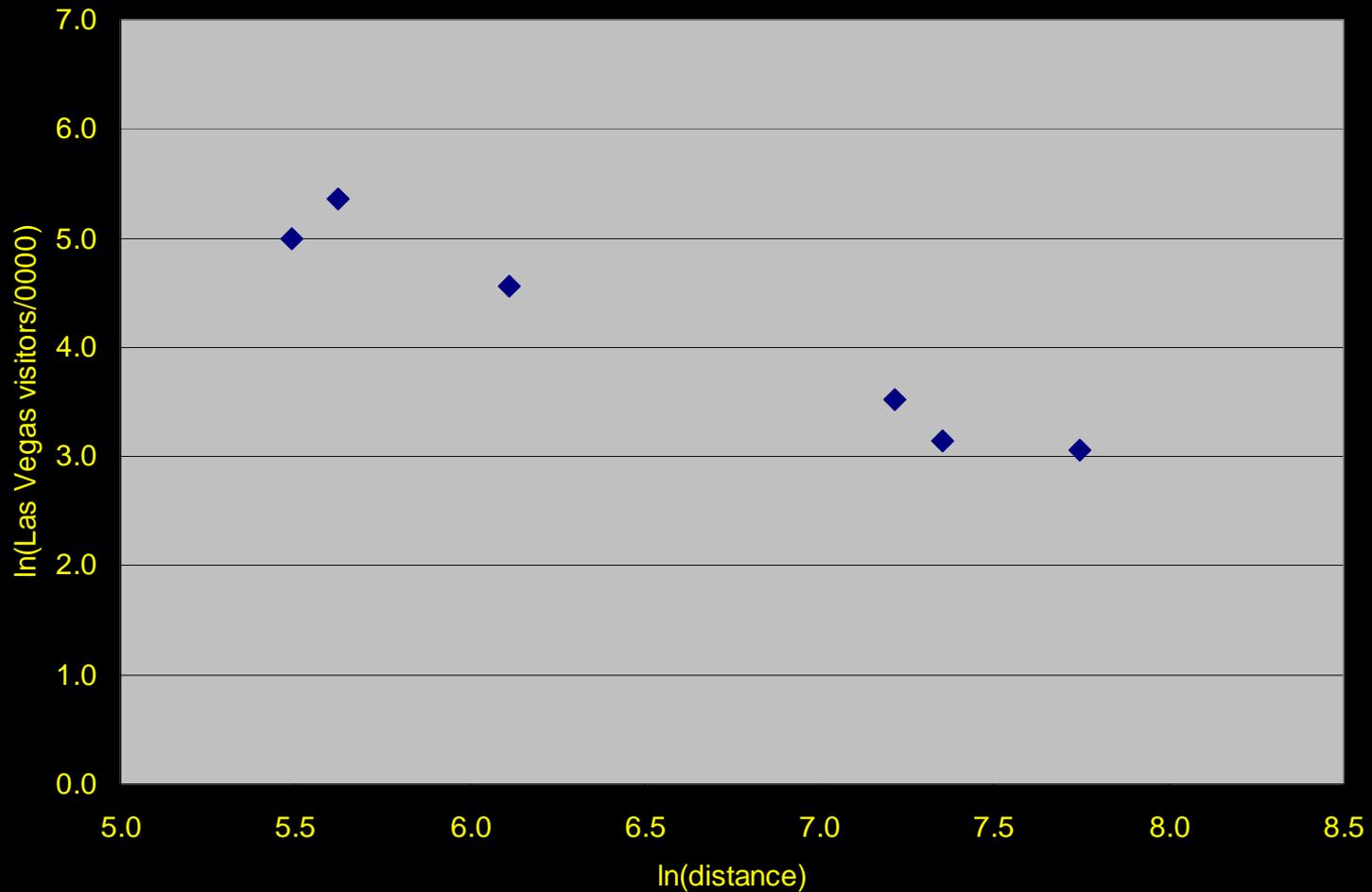
Penn Wellington: Differences in Projected Spending per Adult (Oklahoma)



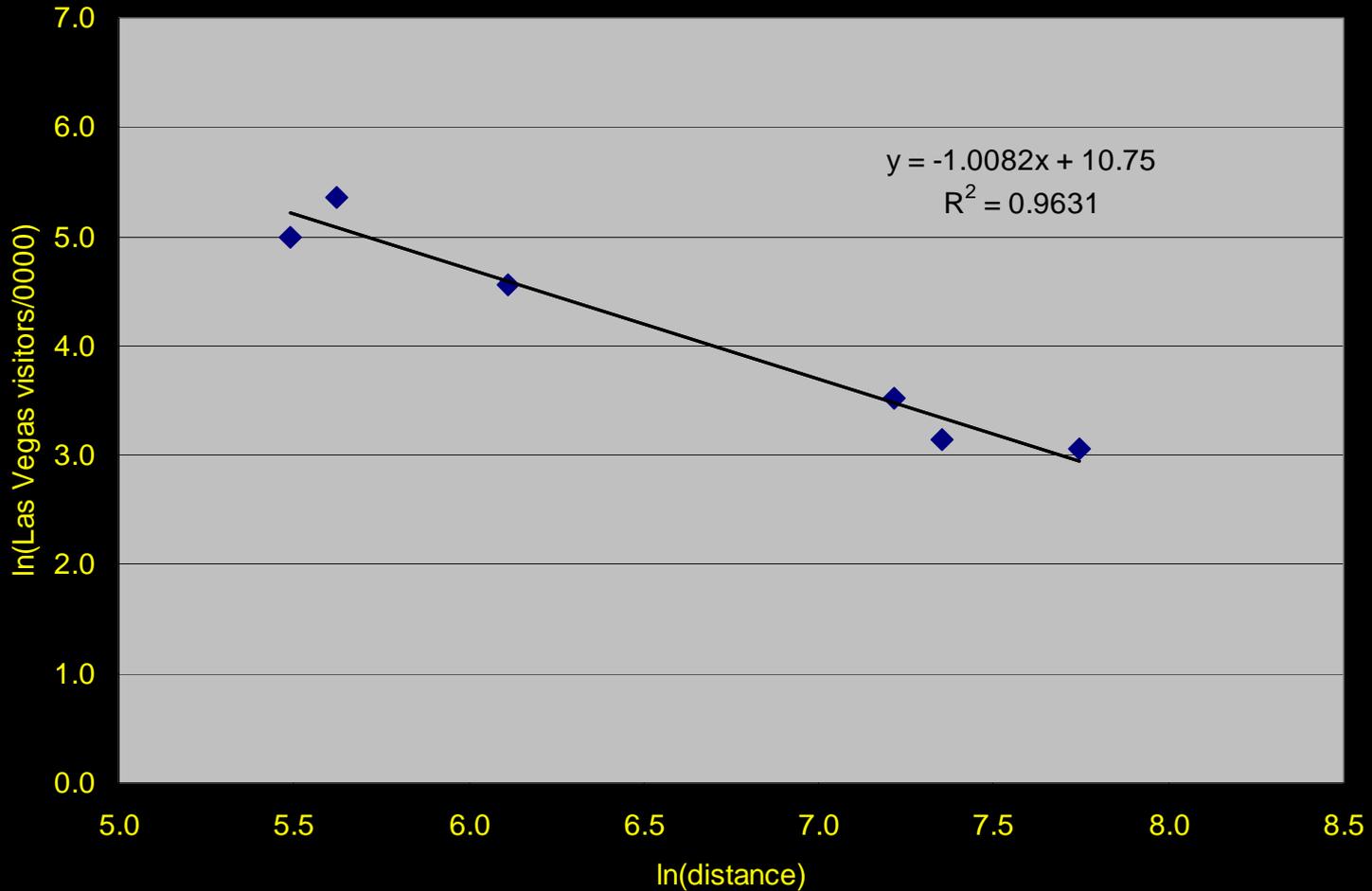
(data sorted not by distance but by Cummings projection)

*Location I:
The Closer, the Better
=“Friction”*

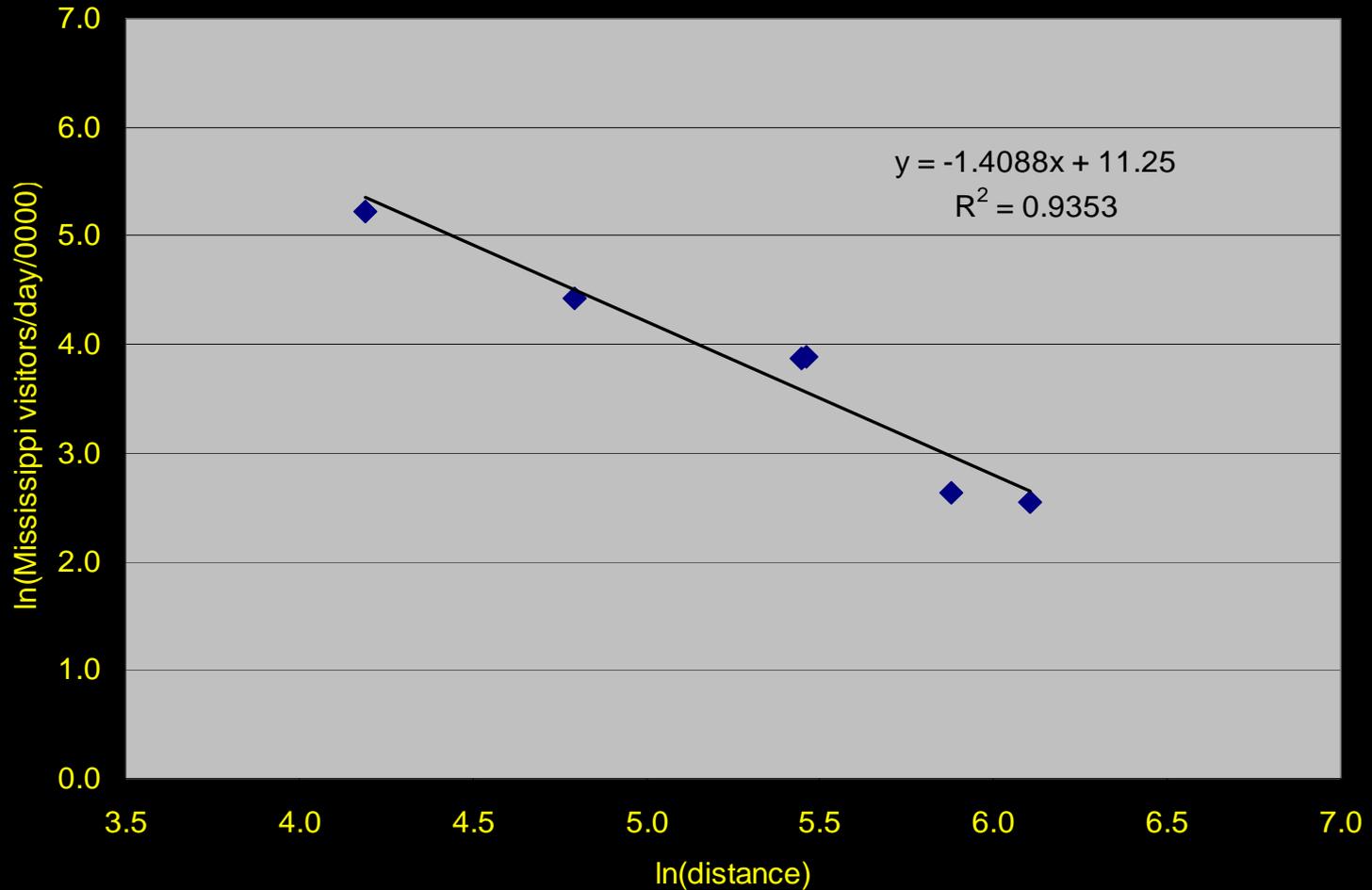
Las Vegas Visitation/Distance



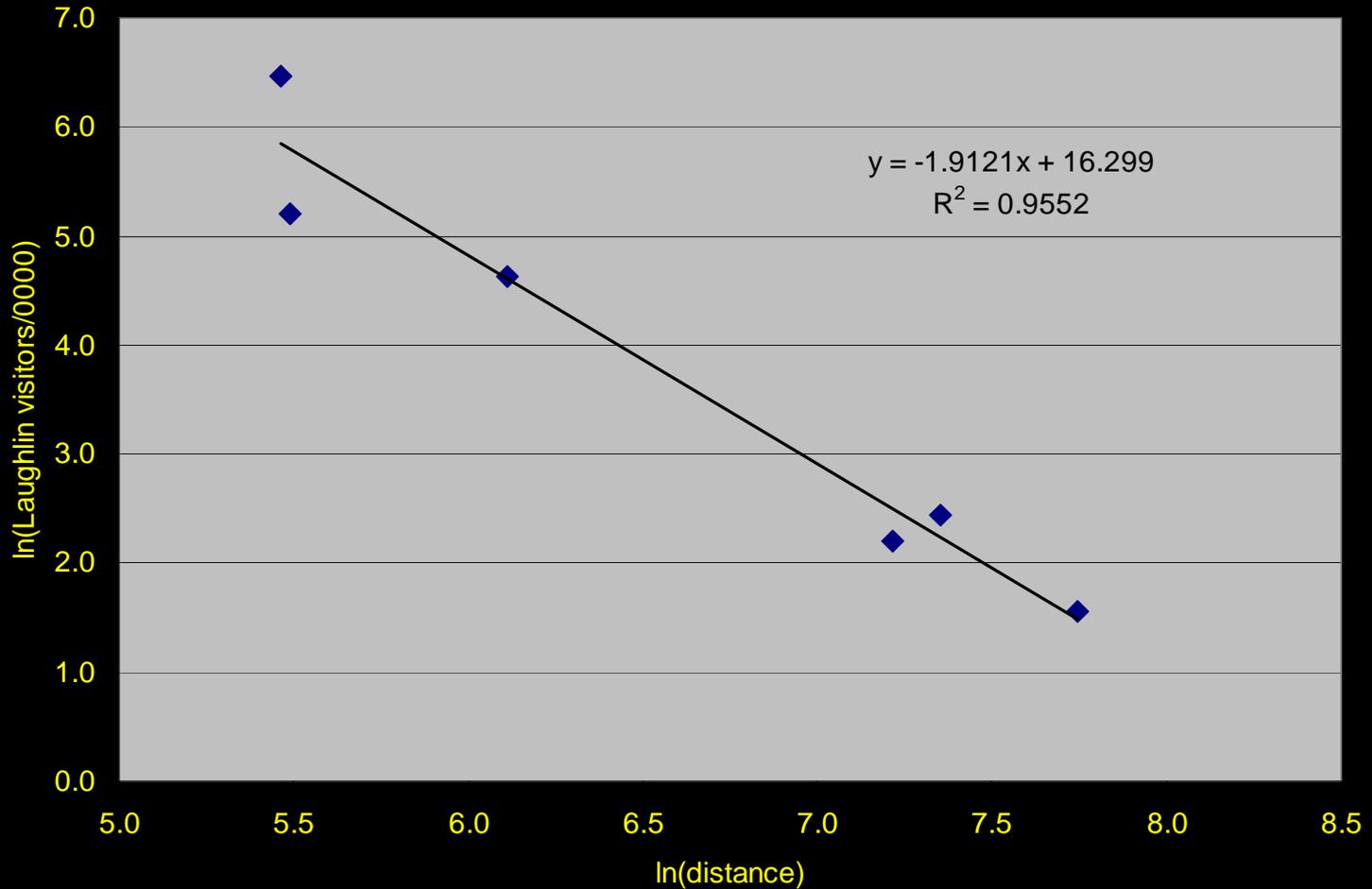
Las Vegas: slope of the curve



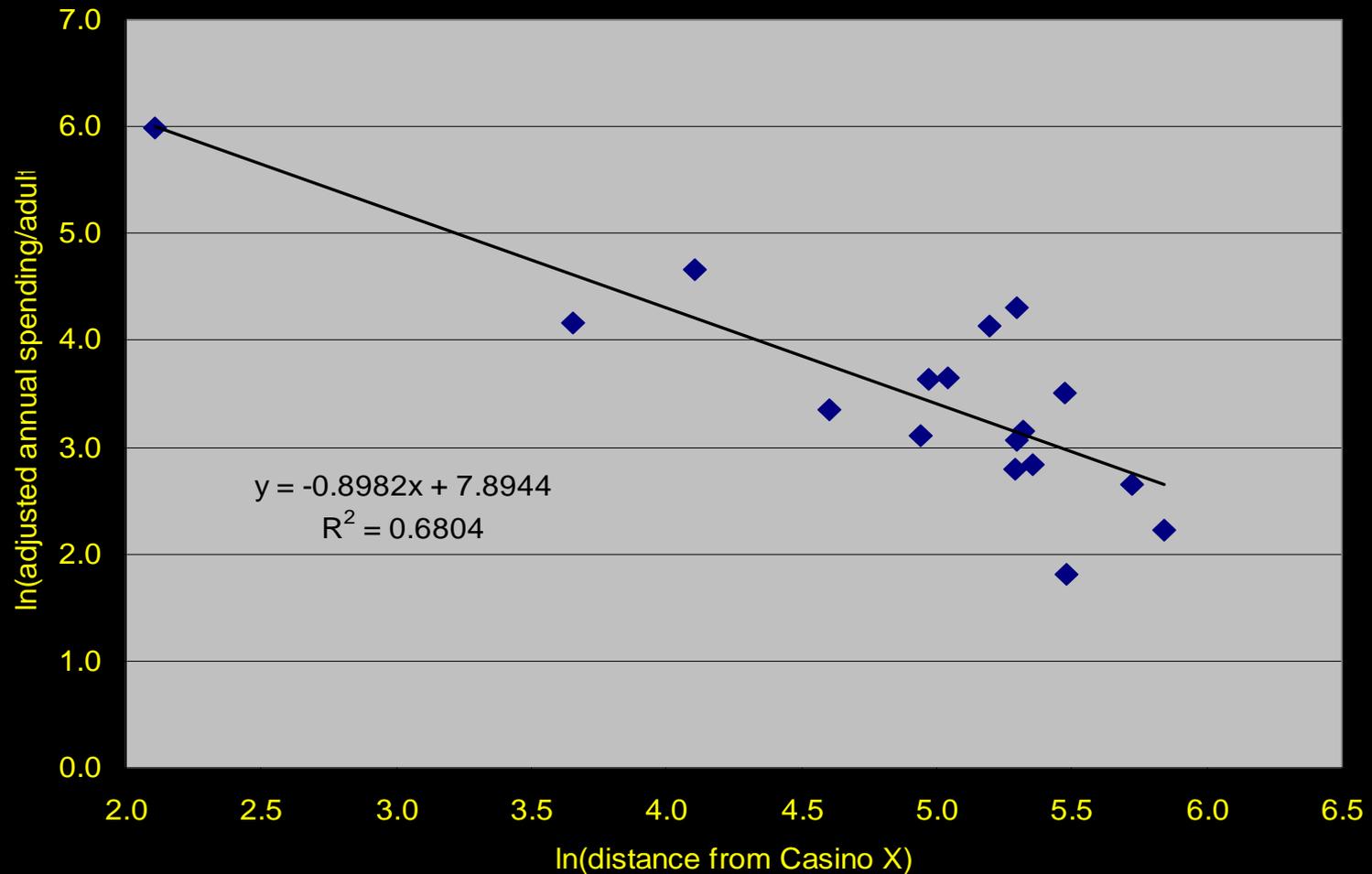
Mississippi: steeper slope



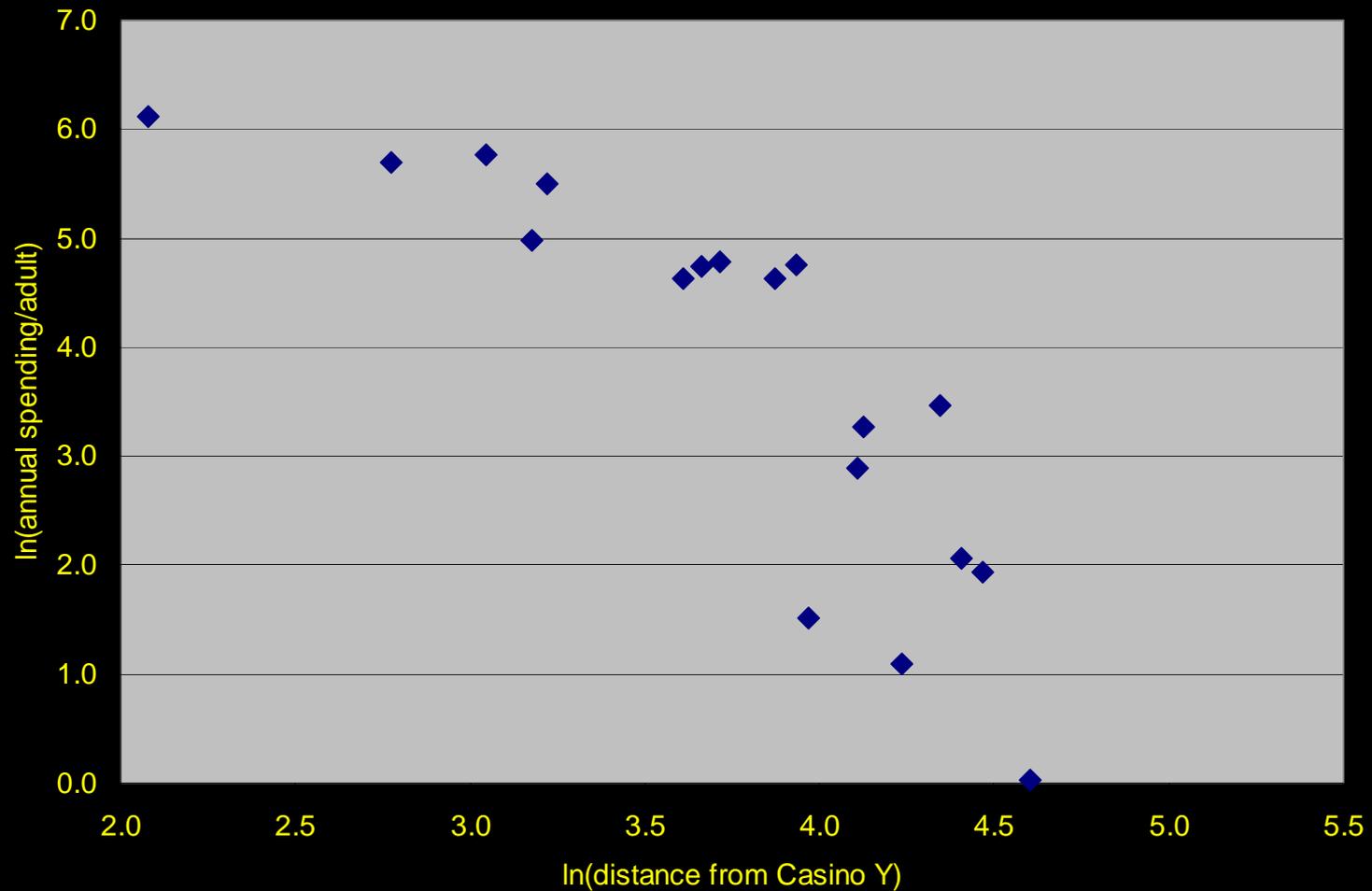
Laughlin: much steeper slope



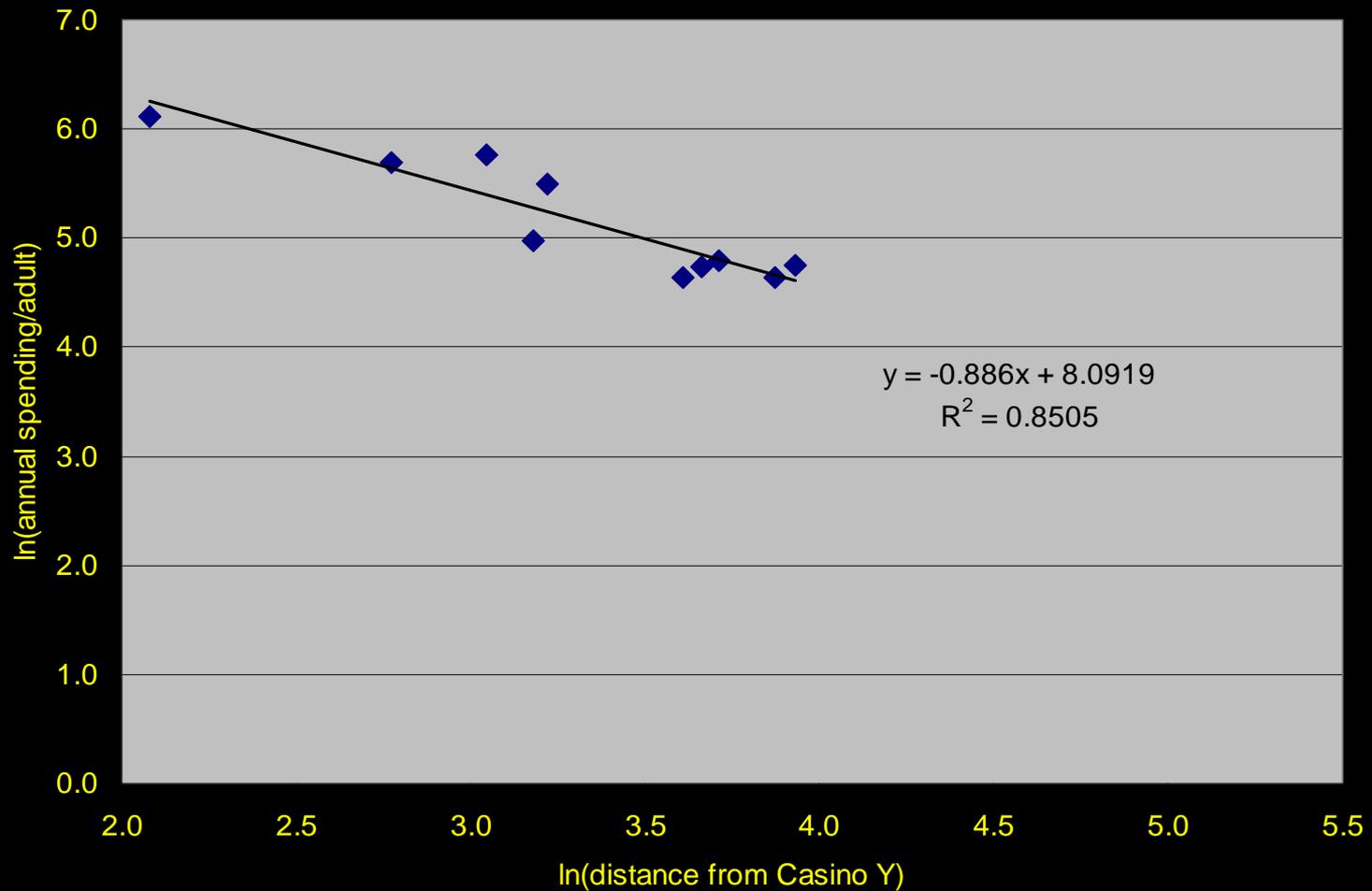
Casino X: isolated market



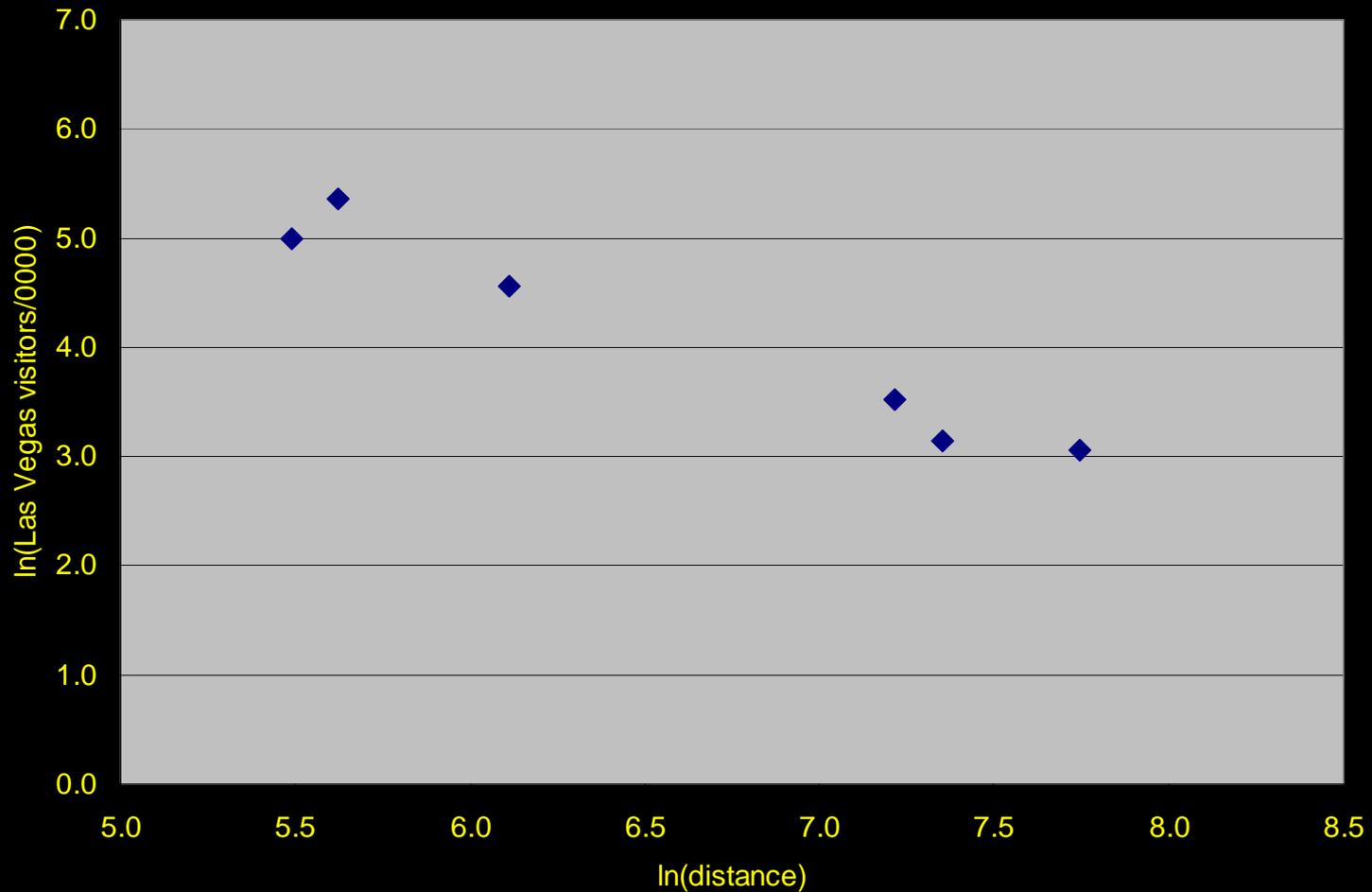
Casino Y: competition afar



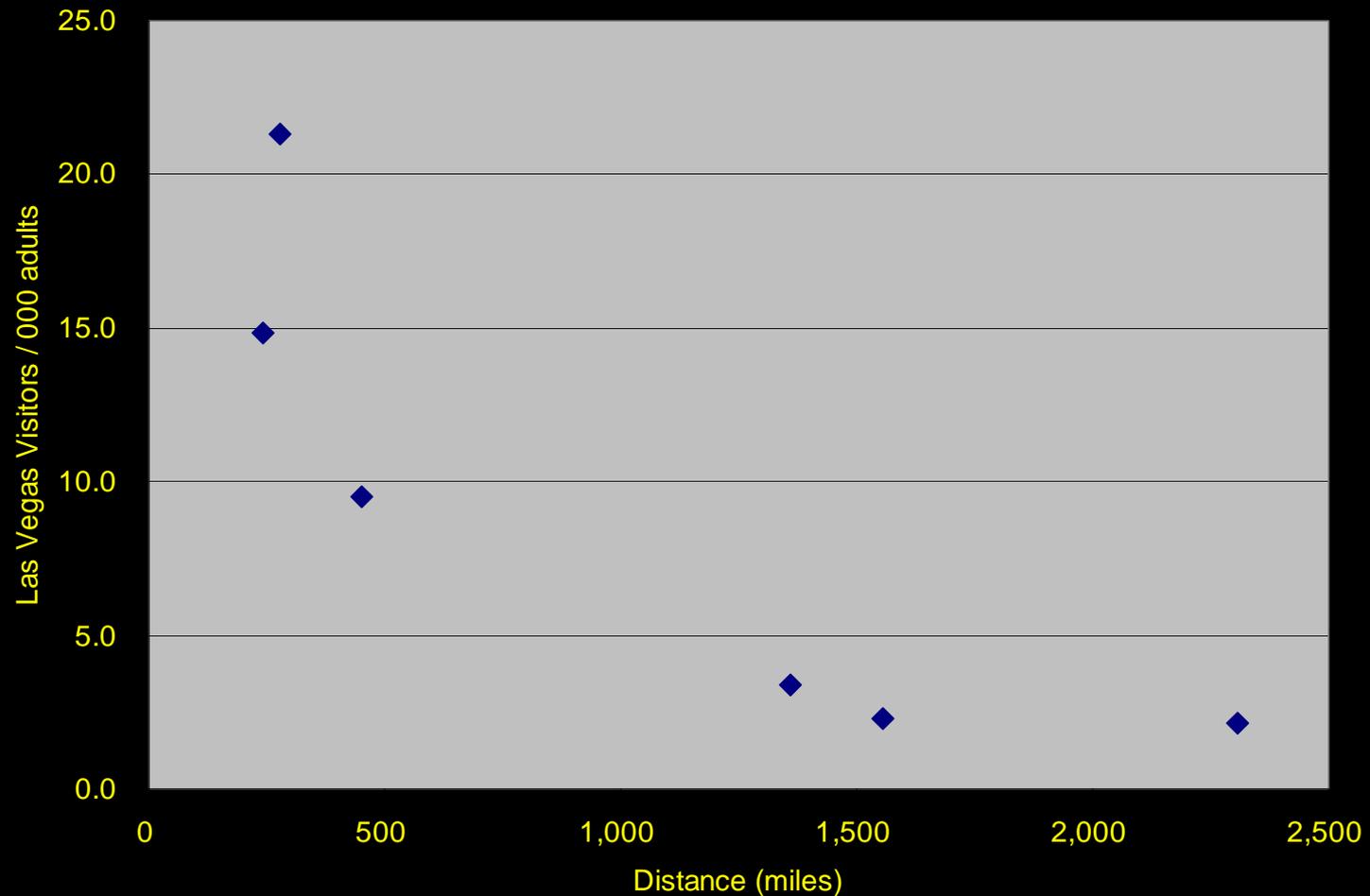
Casino Y: less competition close



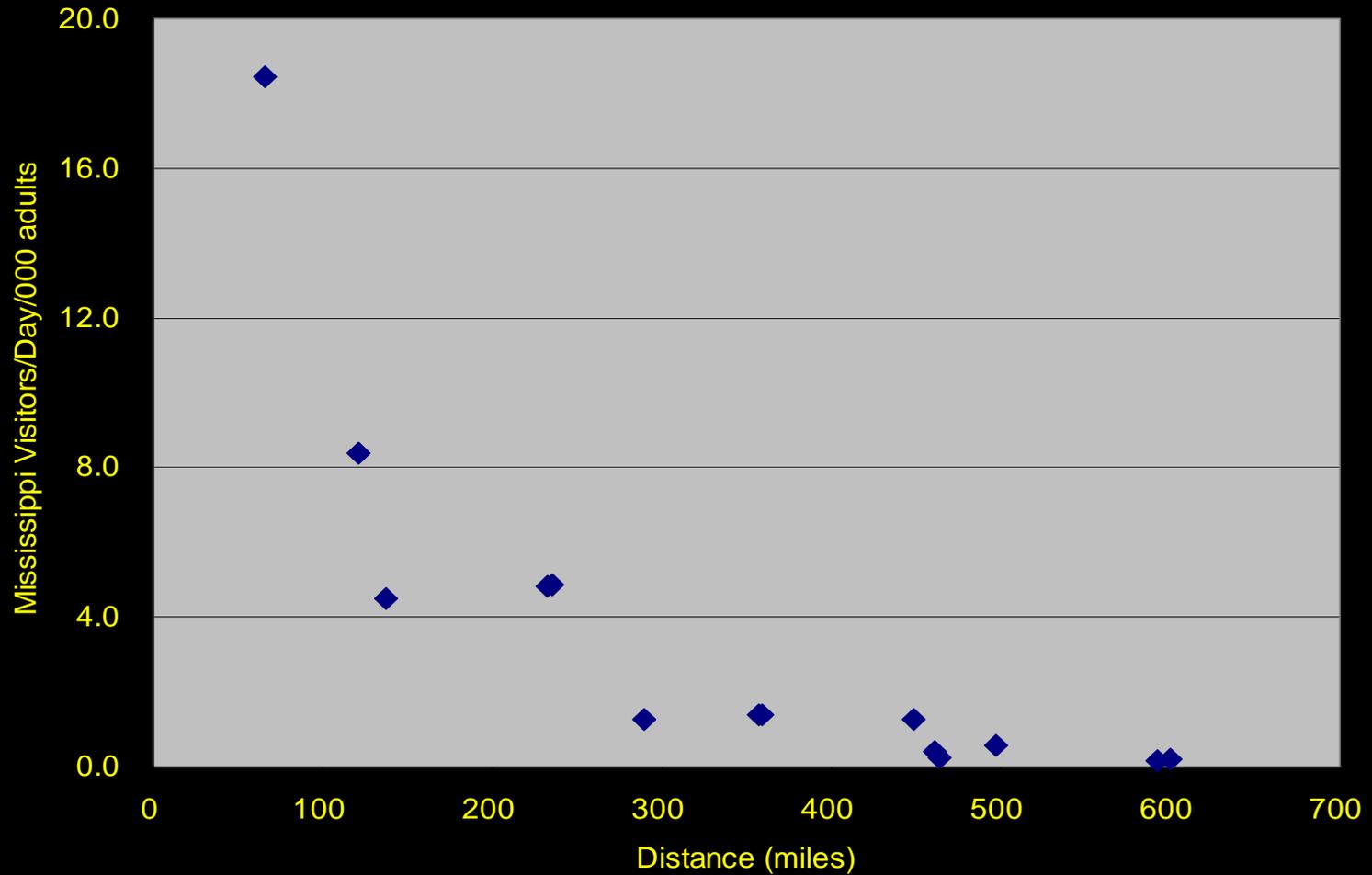
Las Vegas Visitation [log-log]



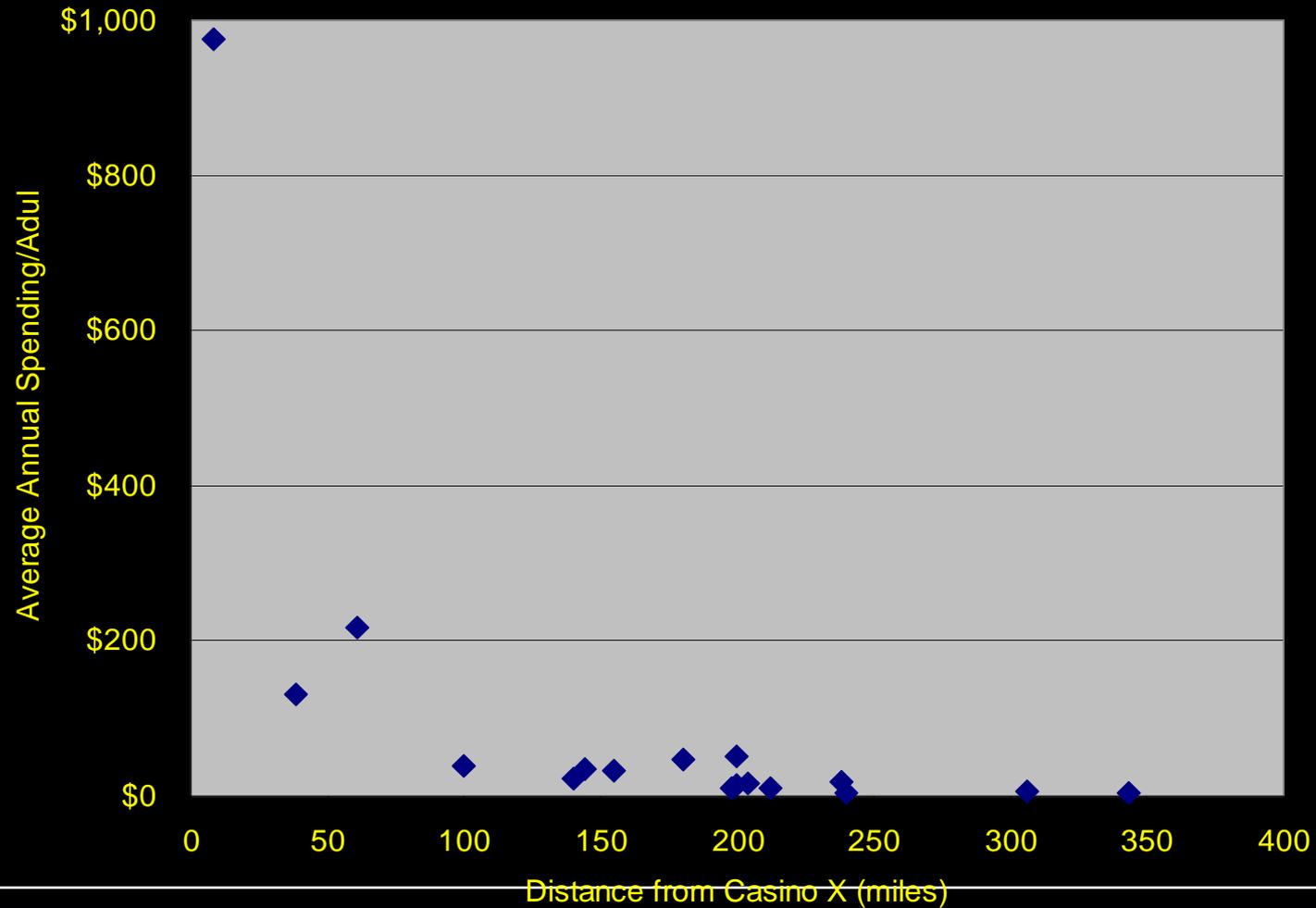
Las Vegas Visitation/Distance



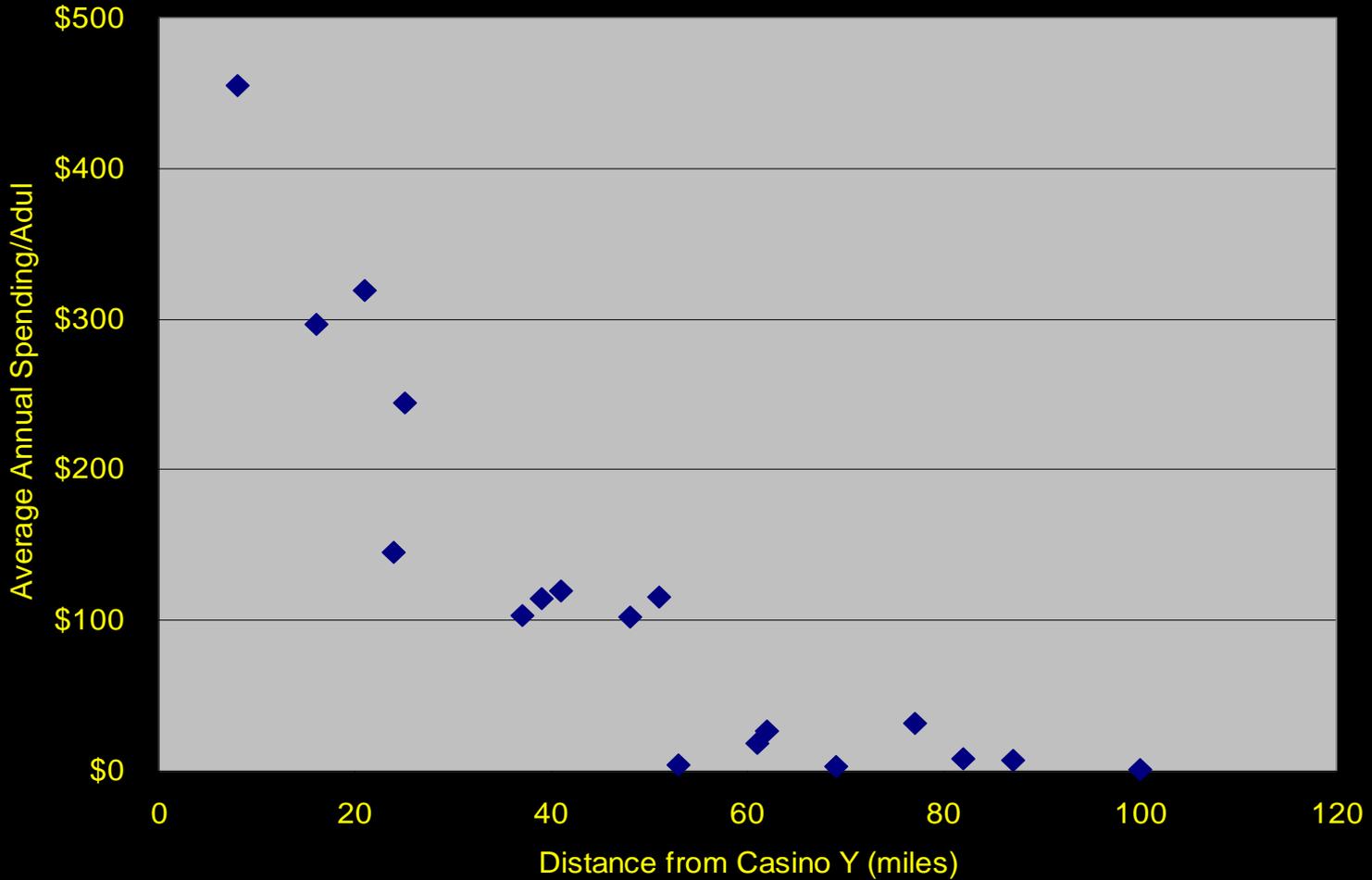
Mississippi Visitors/Day/000



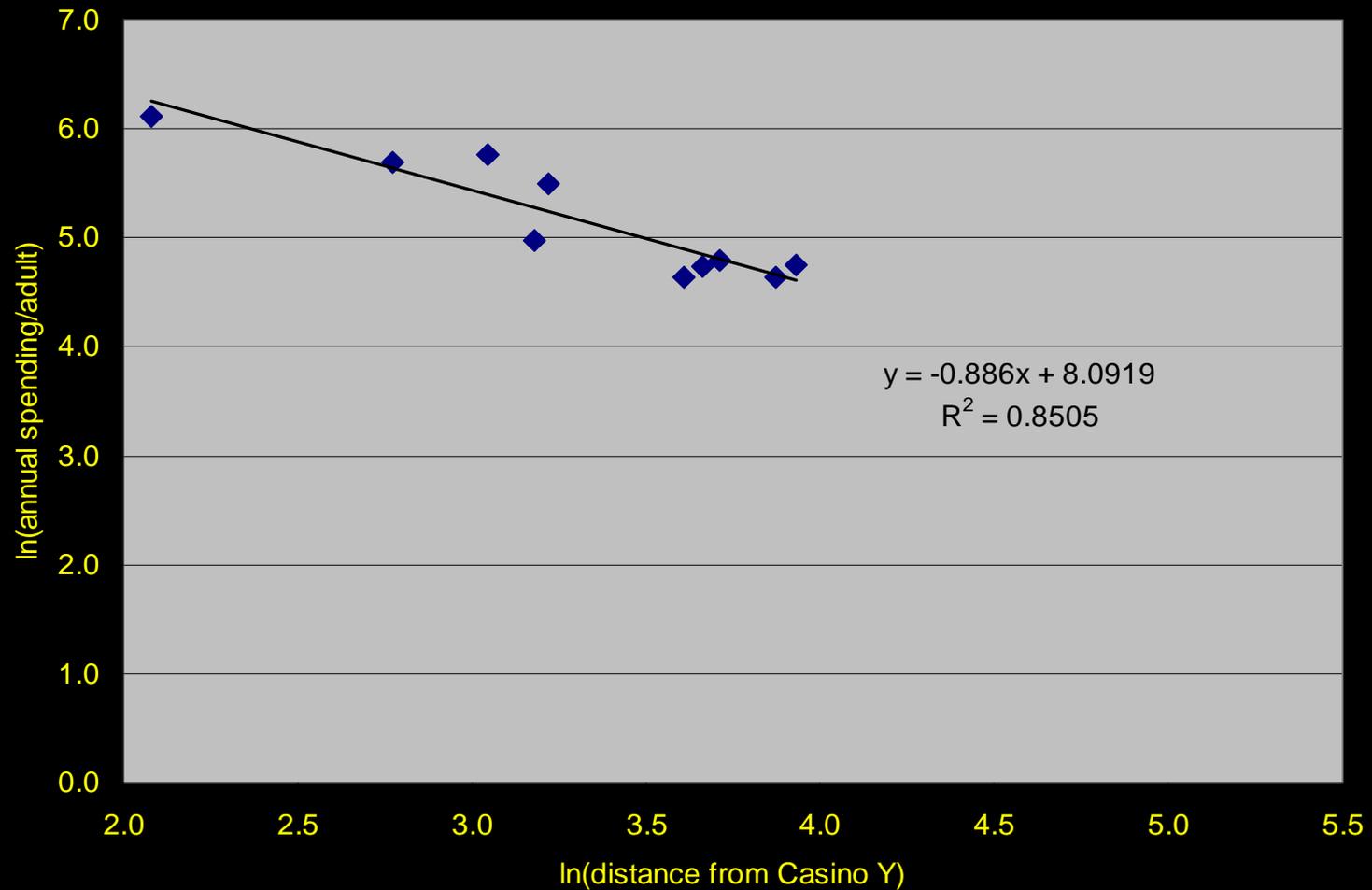
Casino X / players' club data



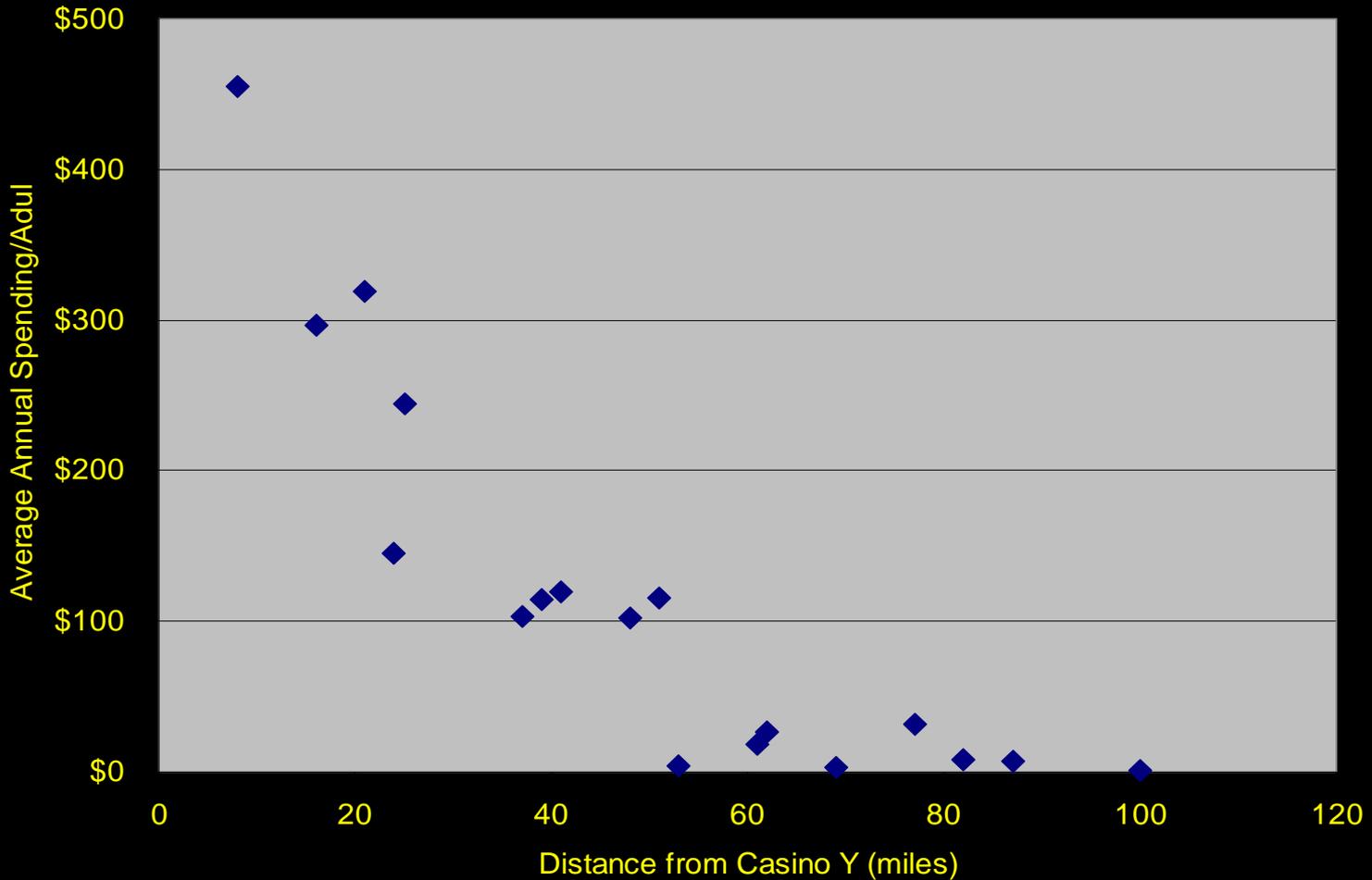
Casino Y: *players' club data*



Casino Y: less competition close



Casino Y: *players' club data*



Model vs. Real World

Exhibit 12: Recent Projections Compared to Actual Results

(Annual Slot Win / \$million)

Facility / Market:	Projection / Source		Actual / Source	
Zia Park / New Mexico	\$53.7	(1)	\$68.9	(2)
Emmetsburg / Iowa	\$23.4	(3)	\$26.4	(4)
Worth County / Iowa	\$34.2	(3)	\$67.5	(4)
Riverside / Iowa	\$82.0	(3)	\$85.8	(4)
IOC Waterloo / Iowa	\$96.8	(3)	\$76.9	(4)
Tioga Downs NY	\$30.2	(5)	\$42.2	(6)
	\$49.9			

The Gaming Markets of Iowa: Analyses and Projections

Presentation to the
Iowa Racing and Gaming Commission

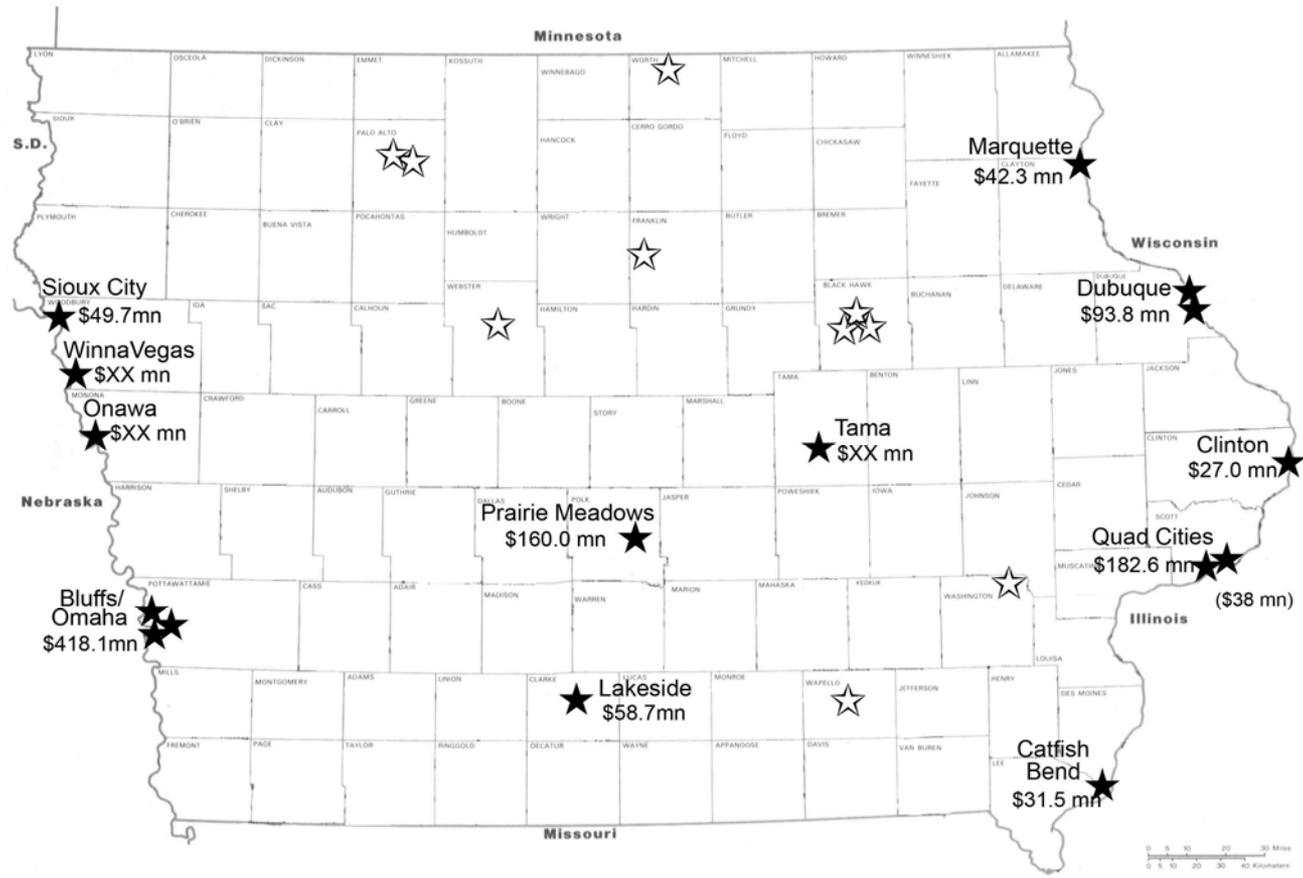
Will E. Cummings
Cummings Associates

April 21, 2005

*Testing the Models:
What Happens With
and Without Tama?*

Gaming Revenues in 2004

Exhibit 1-2: Iowa Facilities' Gaming Revenues (Win) in 2004



Cummings Associates

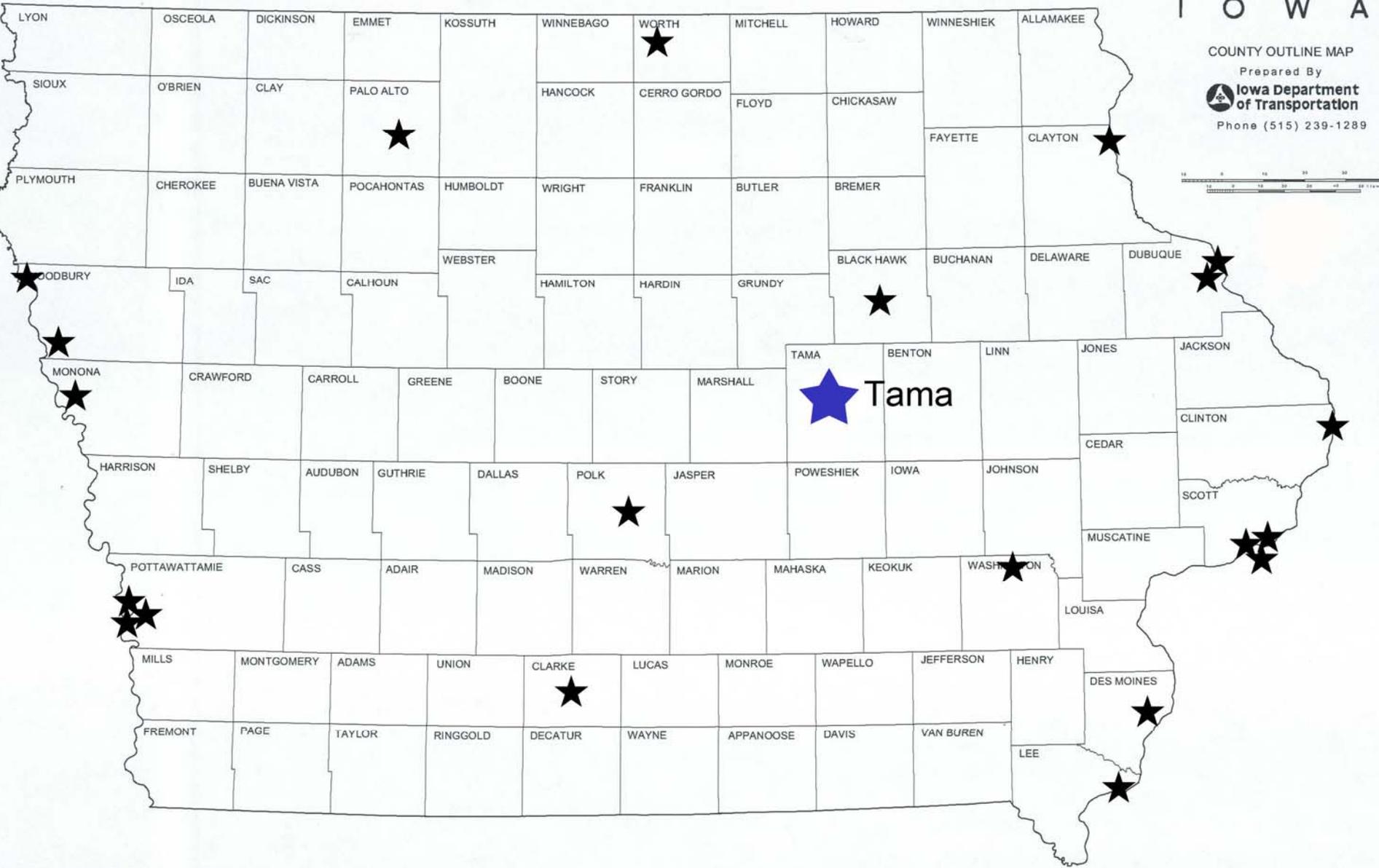
I O W A

COUNTY OUTLINE MAP

Prepared By



Phone (515) 239-1289



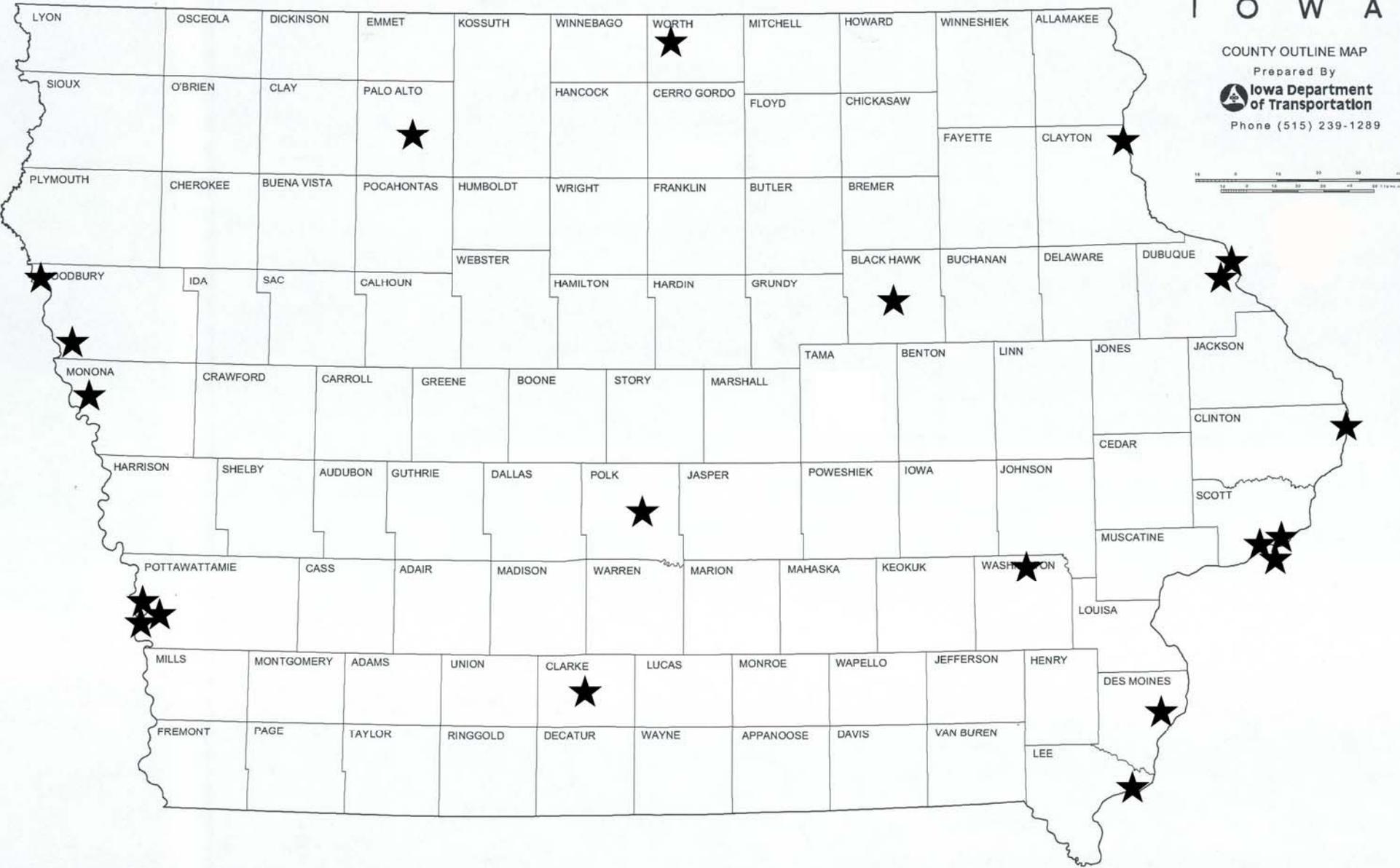
I O W A

COUNTY OUTLINE MAP

Prepared By

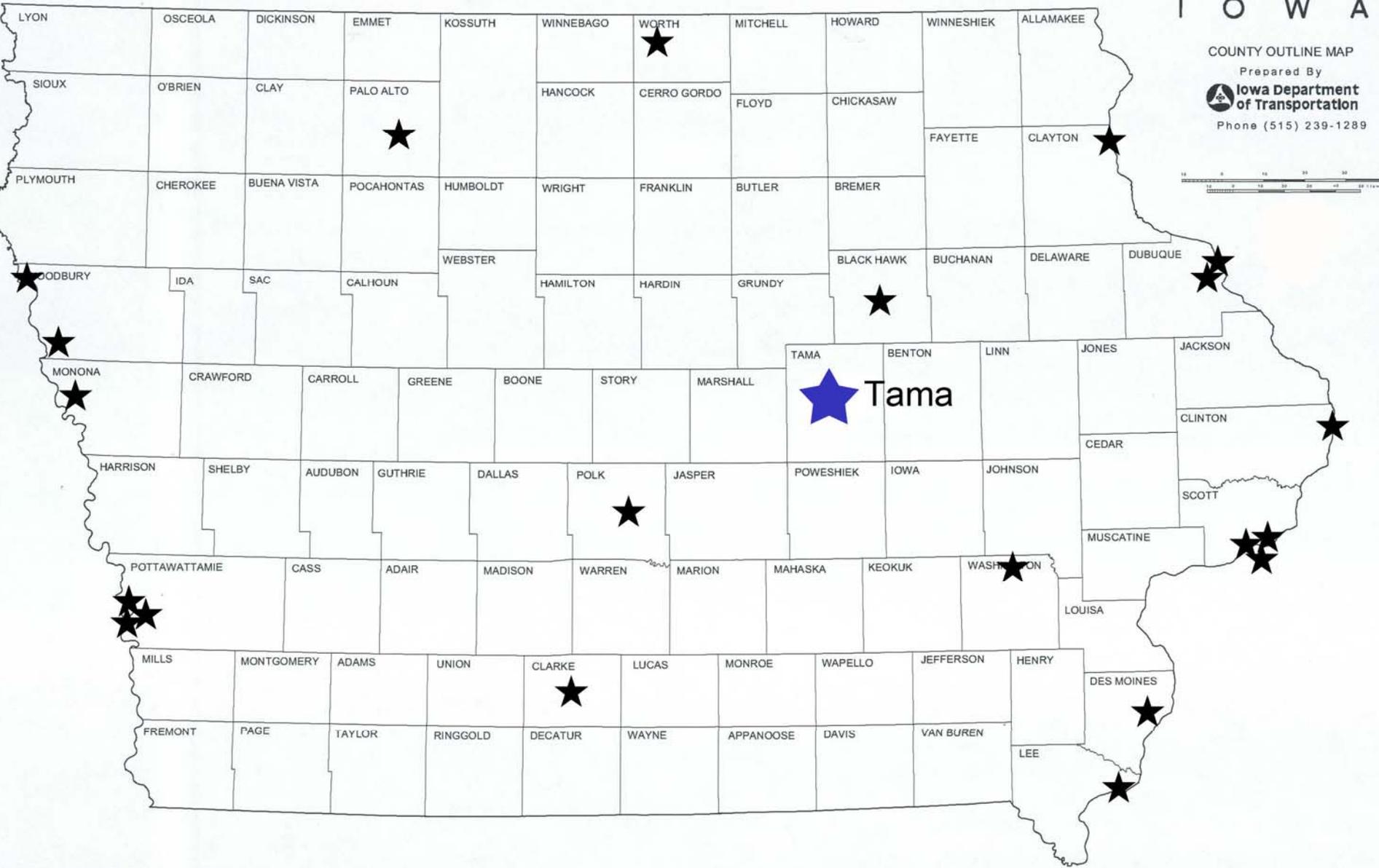


Phone (515) 239-1289



COUNTY OUTLINE MAP

Prepared By
 Iowa Department
of Transportation
Phone (515) 239-1289



With Tama,

Market	Projection	Actual Change
Marquette	-8.4%	-6.9%
Dubuque	-5.3%	-9.3%
Clinton	-4.1%	-3.0%
Quad Cities	-3.4%	-3.4%
Catfish Bend	-5.7%	-4.8%
Prairie Meadows	-9.5%	-10.9%*
Lakeside	-12.3%	-7.0%*
Bluffs/Omaha	-0.5%	+0.8%
Sioux City	-0.7%	+10.4%*

If You Build It, They Will Come -- But How Far?

The “Distance Factor” in Regional Gaming Markets

Presentation to the 12th International
Conference on Gambling & Risk-Taking

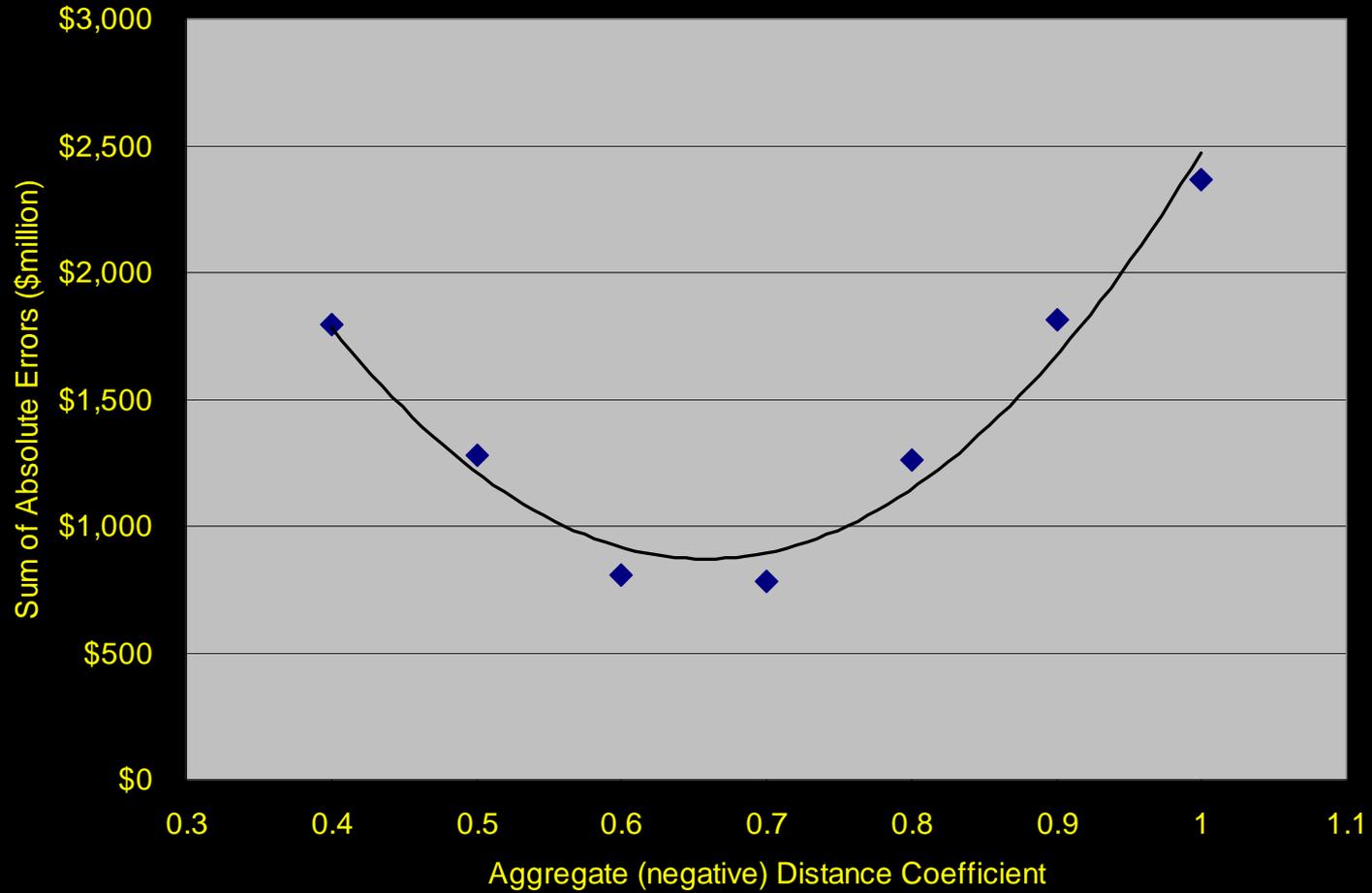
Will E. Cummings
Cummings Associates

May 30, 2003

Estimation Procedures

- Impacts of distance relationships highly nonlinear
- Establish reasonable values for “all other” parameters
 - demographic
 - facility, etc.
- Vary the aggregate distance coefficient
- Measure the (absolute) “error”

Results:



Casinos' "Gravity" *According to Reilly --* *Amended*

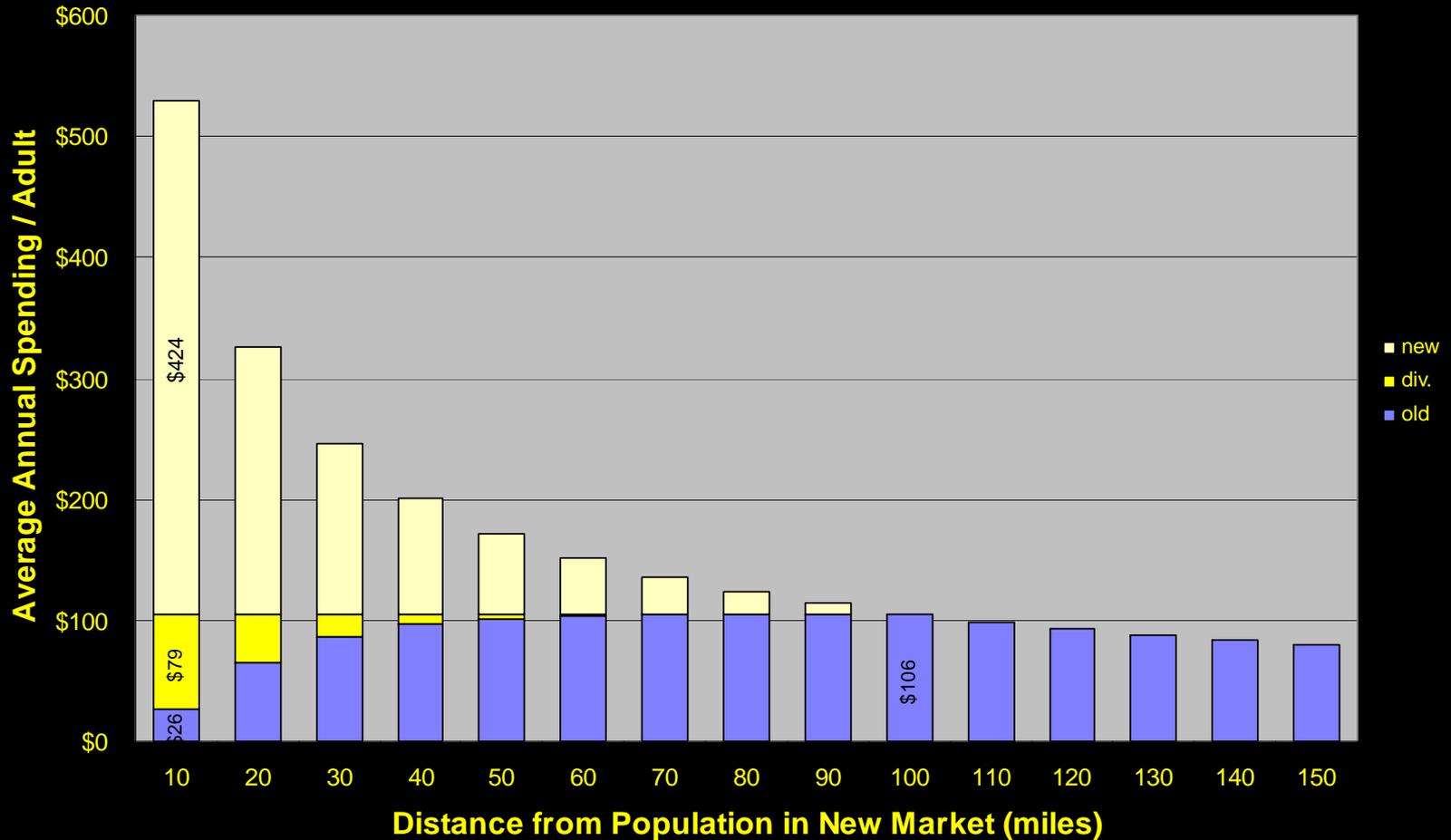
Presentation to the 13th International
Conference on Gambling & Risk-Taking

Will E. Cummings
Cummings Associates

May 25, 2006

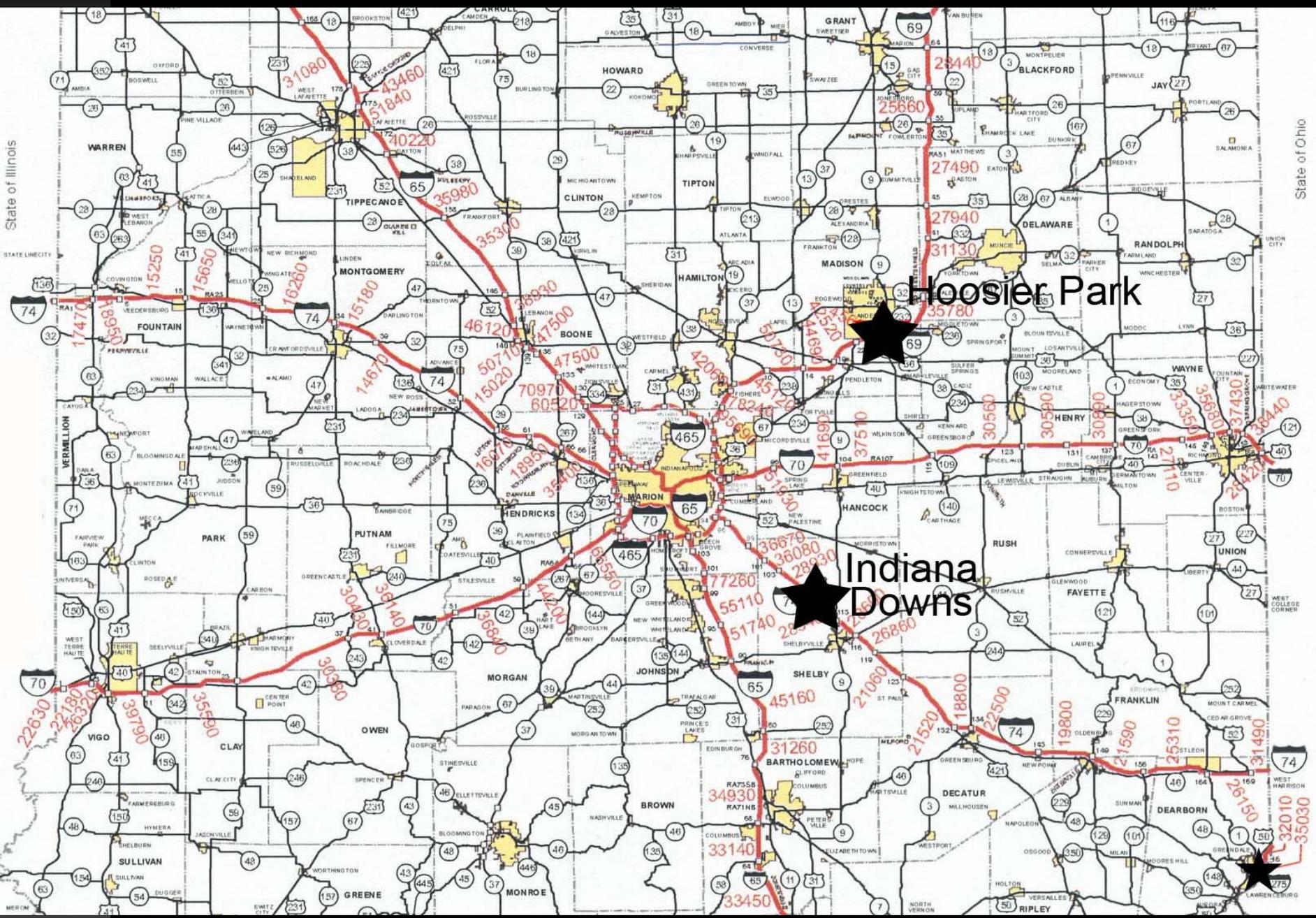
[With notes added May 30, 2006]

Segmentation by Distance



Recent Work

*Hoosier Park &
Indiana Downs*

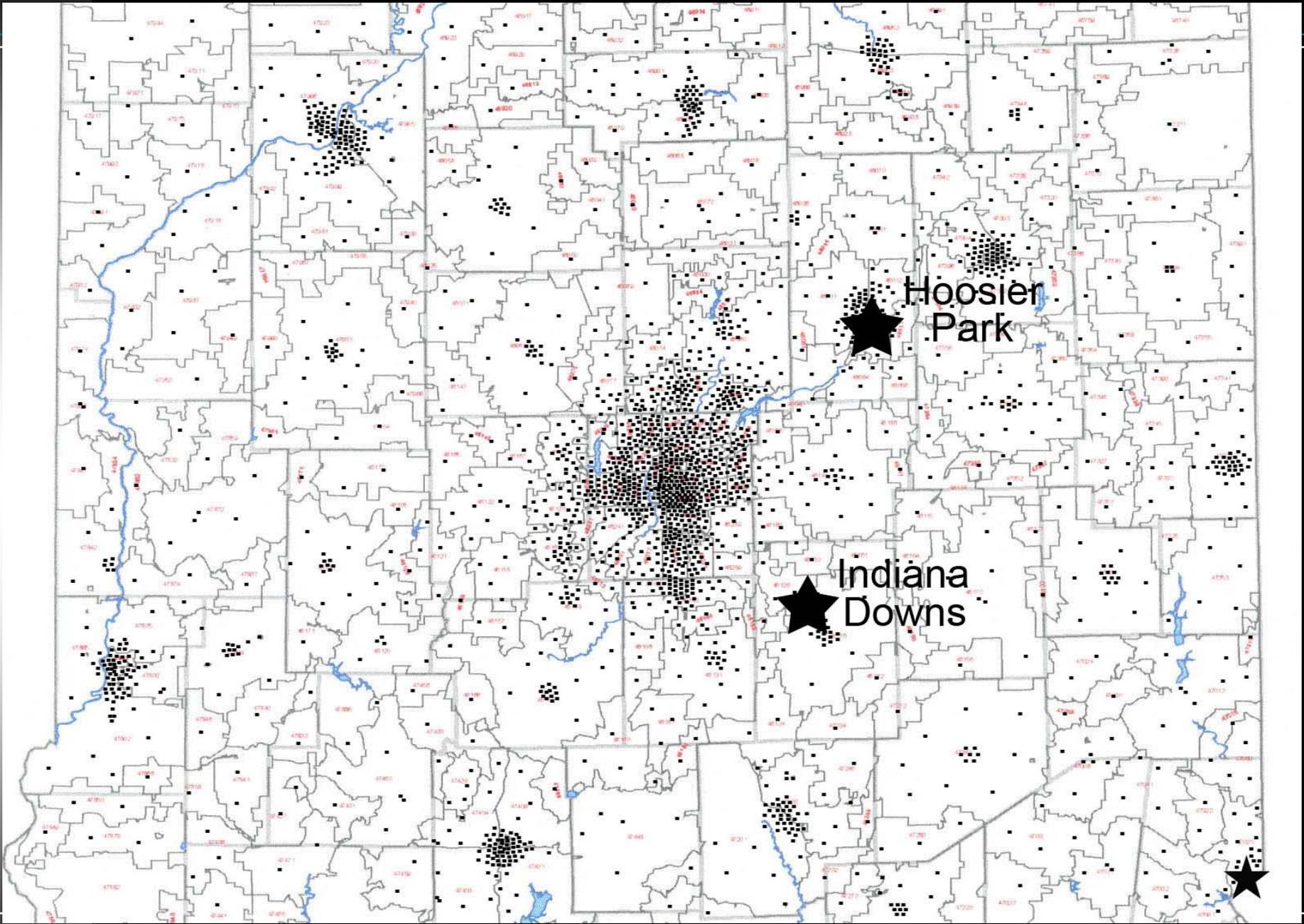


State of Illinois

State of Ohio

Hoosier Park

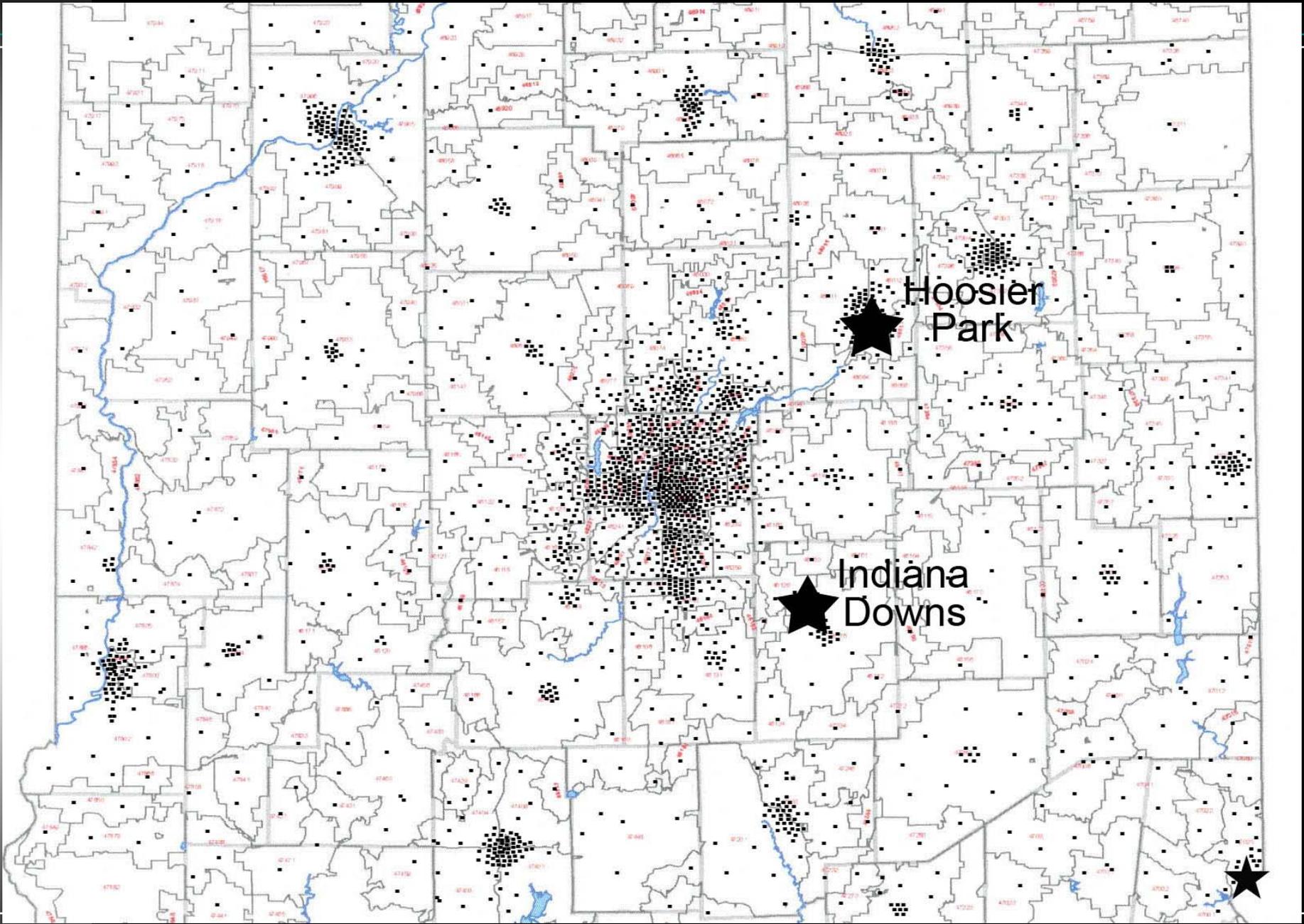
Indiana Downs



Win/Slot/Day:

	Cummings Projection*	June 2008 Actual
Hoosier Park	\$376	\$267
Indiana Downs	\$357	\$245

* From "Projections for . . .," September 8, 2007.



Hoosier
Park

Indiana
Downs

Downstream, Okla.

Projections for Downstream:

Cummings

Merrill Lynch *

\$60 mn

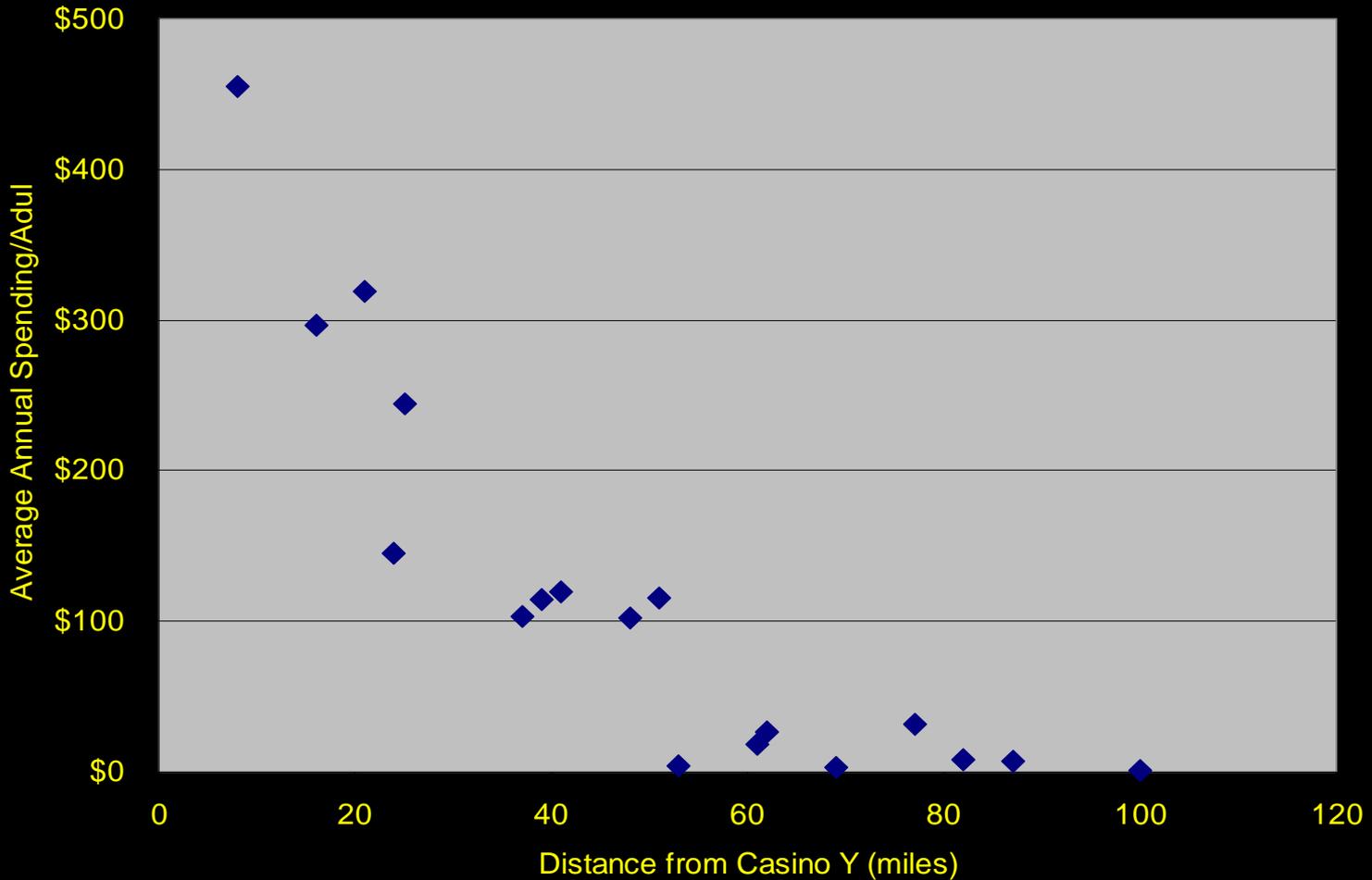
\$140 mn

* For FY09, in Note "Initiating Coverage," June 13, 2008.

Conclusion:

Spending Declines With Distance

Casino Y: *players' club data*



Will E. Cummings
Cummings Associates

135 Jason Street
Arlington, MA 02476
(781) 641-1215
cummingw@aol.com

Gaming Revenue Projections for the Southeast Gaming Zone of Kansas

Presentations to Lottery Gaming Facility Review Board
by Will Cummings / Cummings Associates

July 24, 2008