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June 3, 1996

**EX PARTE**

William F. Caton  
Acting Secretary  
Federal Communications Commission  
Mail Stop 1170  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

EX PARTE OR LATE FILED

Dear Mr. Caton:

Re: CC Docket No. 96-45, Universal Service

Friday, May 31, 1996, Peggy L. Rettle, Manager, Regulatory Policy and Dwayne Dowtin, Director, Regulatory Policy, both of Citizens Telecom, Peter W. Geiler, Financial Manager, Product Economics and Public Policy Analysis, and Ronnie S. Thierman, Executive Director, State and Federal Regulatory Proceedings, both of Pacific Bell, James Stegeman, Director, INDETEC International, and I met with Tim Peterson, Special Counsel to Chief, Common Carrier Bureau, John Morabito, Deputy Chief, Accounting and Audits Division, Bob Loube, Anthony Bush, Lori Huthoerfer, Rafi Mohammed, David Krech, and Bill Sharkey to discuss issues summarized in the attached materials. Please associate these with the above-referenced docket.

We are submitting two copies of this notice in accordance with Section 1.1206(a)(1) of the Commission's rules. Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions.

Sincerely,

Gina Harrison/APC

cc: A. Bush  
L. Huthoerfer  
D. Krech  
R. Loube  
R. Mohammed  
T. Peterson  
B. Sharkey

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# Universal Service Proxy Cost Models

Citizens Utilities Company

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# Citizens Utilities Company

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- Citizens Telecom LECs
- Citizens Telecommunications Long Distance
- ELI-CLEC Affiliate
- Other Utility Operations

# Discussion Topics

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- ◆ Based on Citizens Utilities Testimony in CA (R.95-01-020; I.95-01-021)
  - Desirable Attributes of a Proxy Cost Model
  - Evaluation of Hatfield Model (CA)
  - Evaluation of Pacific Bell / INDETEC CPM

# Desirable Attributes of a Proxy Cost Model

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- ◆ Consistency with economic TSLRIC principles (OANAD in CA), plus a reasonable contribution toward joint and common costs
- ◆ Representative of actual cost drivers
  - Terrain
  - Density
  - Climate
  - Loop Length
  - Technology

# Desirable Attributes (Cont.)

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- ◆ Address all costs associated with universal service provision
- ◆ Outputs must be representative of specific service area cost characteristics
- ◆ Enable companies to use representative proxy inputs if data not available
- ◆ Inputs and methodologies must be verifiable, reliable, and sustainable

# Hatfield Proxy Model (CA)

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- ◆ Dependent upon Benchmark Cost Model
- ◆ Fails to use specific actual and verifiable data
- ◆ Excludes engineering & planning costs for feeder and distribution
- ◆ Inputs based on undisclosed contacts & experience--unverifiable

# Hatfield (Ctd.)

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- ◆ Overhead attribution from airline and automobile manufacturing industries
- ◆ Underestimates switching costs in rural areas
- ◆ Expenses linked to investment

# Pacific Bell / INDETEC Cost Proxy Model

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- ◆ Meets criteria of Citizens Utilities Company
- ◆ Suggested Improvements
  - Midsize and Small LECs cannot produce the ARMIS expense data required
  - Midsize and Small LECs should be able to use alternative expense data sources

# Cost Proxy Model Reports

- ⇒ The Handouts Contain Sample Reports from the California Model
  - ⇒ Detail Reports
    - ⇒ State Total
  - ⇒ Summary Reports
    - ⇒ Company
    - ⇒ Density Type
    - ⇒ Terrain Type
    - ⇒ CLLI

**SAMPLE CPM DETAIL REPORT: STATEWIDE AVERAGE**

COST PROXY MODEL (CPM)  
STATEWIDE AVERAGE

STATEWIDE AVERAGE LINES : 12794983  
MISSING LINES : 0

FAMILY	ELEMENT	NON-CABLE QUANTITY	CABLE LENGTH (FT)	INVESTMENT (\$)	REVENUE (\$/MO)	OPERATING EXPENSE (\$/MO)	CAPITAL COST (\$/MO)
DST	AER_CU		342	19.04	\$0.00	\$0.00	\$0.30
	BUR_CU		1,623	153.12	\$0.00	\$0.00	\$2.16
	COND_CU	538 (FT)		23.49	\$0.00	\$0.00	\$0.24
	DROP	1.00		51.98	\$0.00	\$0.00	\$0.73
	POLE_CU	342 (FT)		18.17	\$0.00	\$0.00	\$0.20
	TERMINAL	1.00		53.38	\$0.00	\$0.00	\$0.77
	UGD_CU		538	19.88	\$0.00	\$0.00	\$0.29
DST	XXX		2,503	339.07	\$0.00	\$0.00	\$4.69
FDR	AER_CU		214	4.70	\$0.00	\$0.00	\$0.07
	AER_FO		839	6.28	\$0.00	\$0.00	\$0.08
	BUR_CU		51	2.25	\$0.00	\$0.00	\$0.03
	BUR_FO		221	3.12	\$0.00	\$0.00	\$0.04
	COND_CU	2,655 (FT)		25.24	\$0.00	\$0.00	\$0.26
	COND_FO	3,852 (FT)		8.39	\$0.00	\$0.00	\$0.08
	COND_FO9	2,523 (FT)		6.90	\$0.00	\$0.00	\$0.07
	PAIR_GN	0.43		141.88	\$0.00	\$0.00	\$2.45
	POLE_CU	214 (FT)		3.20	\$0.00	\$0.00	\$0.04
	POLE_FO	839 (FT)		10.55	\$0.00	\$0.00	\$0.12
	SAI	1.00		22.96	\$0.00	\$0.00	\$0.33
	UGD_CU		2,655	39.43	\$0.00	\$0.00	\$0.57
	UGD_FO		6,374	11.35	\$0.00	\$0.00	\$0.14
FDR	XXX		10,355	286.27	\$0.00	\$0.00	\$4.27
REVENU	REVENU_T	0.00		0.00	\$15.60	\$0.00	\$0.00
STDSVC	ACCT	1.00		0.00	\$0.00	\$0.00	\$0.00
	ADV_MKT	1.00		0.00	\$0.00	\$0.00	\$0.00
	BILLING	1.00		0.00	\$0.00	\$0.22	\$0.00
	COMMON	1.00		0.00	\$0.00	\$2.98	\$0.00
	DA	1.00		0.00	\$0.00	\$1.02	\$0.00
	EMPSUPT	1.00		0.00	\$0.00	\$0.09	\$0.00
	ENG_MV	1.00		0.00	\$0.00	\$0.00	\$0.00
	GPC_IS	1.00		0.00	\$0.00	\$0.13	\$0.00
	MISC	1.00		0.00	\$0.00	\$0.16	\$0.00
	NREC	1.00		0.00	\$0.00	\$0.37	\$0.00
	NVS_EXP	1.00		0.00	\$0.00	\$0.04	\$0.00
	NVS_INV	1.00		0.00	\$0.00	\$0.00	\$0.00
	OCS	1.00		0.00	\$0.00	\$0.07	\$0.00
	O_MINUS	1.00		0.00	\$0.00	\$0.12	\$0.00
	PNO_DIFF	1.00		0.00	\$0.00	\$0.00	\$0.00
	REPR_MTC	1.00		0.00	\$0.00	\$3.61	\$0.00
	SALES	1.00		0.00	\$0.00	\$0.05	\$0.00
	SEC_INV	1.00		0.00	\$0.00	\$0.00	\$1.11
	SHARED	1.00		0.00	\$0.00	\$4.01	\$0.00
	TESTING	1.00		0.00	\$0.00	\$0.00	\$0.00
	WP_LIST	1.00		0.00	\$0.00	\$0.34	\$0.00
STDSVC	XXX			0.00	\$0.00	\$13.23	\$1.12
SW/IO	SW_LT	1.00		112.88	\$0.00	\$0.00	\$1.65
	SW_MSG_F	119.22		117.88	\$0.00	\$0.00	\$1.73
	SW_SHR	8.36		8.36	\$0.00	\$0.00	\$0.12
SW/IO	XXX			239.13	\$0.00	\$0.00	\$3.50
XXX	XXX		12,858	864.46	\$15.60	\$13.23	\$13.58

SUBSIDY PER LINE: \$11.20 TOTAL COMPANY SUBSIDY: \$143,347,588

**SAMPLE CPM SUMMARY REPORT:****DENSITY ZONES**

Cost Proxy Model:Universal Service Edition  
 STATE AVERAGE  
 DENSITY TYPE SPECIFIC DATA - ALL COMPANIES

DENSITY TYPE	CABLE LENGTH (ft)	INVESTMENT (\$/line)	REVENUE (\$/line/mo)	OPERATING EXPENSE (\$/line/mo)	CAPITAL COST (\$/line/mo)	SUBSIDY (\$/line/mo)	LINES
Z1	47,557.15	\$7,482.82	\$16.55	\$16.47	\$100.82	\$100.74	77,082
Z2	35,548.46	\$2,604.67	\$16.20	\$16.26	\$37.56	\$37.63	268,128
Z3	24,257.52	\$2,013.53	\$15.98	\$15.04	\$29.37	\$28.43	348,418
Z4	18,103.45	\$1,112.19	\$16.03	\$14.31	\$17.42	\$15.69	768,422
Z5	13,385.93	\$866.70	\$15.90	\$13.40	\$13.81	\$11.31	3,260,958
Z6	11,421.61	\$725.18	\$15.52	\$12.93	\$11.67	\$9.08	5,820,827
Z7	8,379.08	\$526.72	\$15.08	\$12.63	\$8.58	\$6.12	2,251,089

**SAMPLE CPM SUMMARY REPORT:****TERRAIN TYPE**

Cost Proxy Model:Universal Service Edition  
 STATE AVERAGE  
 TERRAIN TYPE SPECIFIC DATA - ALL COMPANIES

TERRAIN TYPE	CABLE LENGTH (ft)	INVESTMENT (\$/line)	REVENUE (\$/line/mo)	OPERATING EXPENSE (\$/line/mo)	CAPITAL COST (\$/line/mo)	SUBSIDY (\$/line/mo)	LINES
H	17,187.07	\$1,307.79	\$15.34	\$13.01	\$19.57	\$17.24	470,916
M	16,517.20	\$1,133.23	\$15.63	\$13.68	\$17.36	\$15.42	1,562,440
N	12,141.80	\$809.73	\$15.59	\$13.15	\$12.80	\$10.36	10,648,540
W	12,060.86	\$988.29	\$17.60	\$15.30	\$15.29	\$12.99	113,027

**SAMPLE CPM SUMMARY REPORT:****COMPANIES**

Cost Proxy Model:Universal Service Edition  
STATE AVERAGE  
COMPANY SPECIFIC DATA - ALL COMPANIES

COMPANY	CABLE LENGTH (ft)	INVESTMENT (\$/line)	REVENUE (\$/line/mo)	OPERATING EXPENSE (\$/line/mo)	CAPITAL COST (\$/line/mo)	SUBSIDY (\$/line/mo)	LINES
CALAVERAS	22,986.66	\$3,545.27	\$20.08	\$50.85	\$52.90	\$83.66	1,838
CALIF-OREGON	16,431.02	\$1,815.81	\$23.85	\$42.33	\$28.70	\$47.18	1,681
CITIZENS	18,915.78	\$1,490.87	\$21.35	\$18.30	\$22.34	\$19.28	59,926
CITIZENS TUOLOMNE	28,793.69	\$2,035.58	\$15.70	\$39.06	\$31.56	\$54.92	5,325
CONTEL	15,769.83	\$1,293.13	\$20.35	\$19.73	\$19.84	\$19.22	278,198
CP NATIONAL	8,850.33	\$1,094.70	\$20.35	\$38.68	\$18.53	\$36.86	9,762
DUCOR	15,909.55	\$2,312.05	\$20.35	\$74.36	\$38.25	\$92.26	598
EVANS	11,074.86	\$1,262.11	\$20.35	\$33.19	\$20.29	\$33.13	10,190
FORESTHILL	25,564.35	\$1,986.98	\$14.15	\$27.08	\$30.20	\$43.13	2,143
GTE-C	13,407.73	\$833.03	\$20.75	\$15.59	\$13.35	\$8.19	2,685,264
HAPPY VALLEY	24,387.34	\$2,469.07	\$20.35	\$36.93	\$37.05	\$53.63	2,640
HORNITOS	32,946.79	\$5,954.28	\$14.75	\$62.40	\$85.65	\$133.31	409
KERMAN	14,385.17	\$1,411.04	\$22.90	\$26.47	\$22.07	\$25.63	5,485
PACIFIC	12,490.32	\$848.09	\$13.97	\$12.05	\$13.26	\$11.34	9,620,458
PINNACLES	18,524.79	\$4,689.92	\$20.35	\$83.81	\$72.64	\$136.11	15
PONDEROSA	30,389.63	\$2,728.59	\$21.35	\$60.51	\$42.68	\$81.84	5,346
ROSEVILLE	15,131.80	\$890.98	\$14.30	\$18.05	\$14.58	\$18.33	68,421
SIERRA	36,084.98	\$2,552.20	\$20.35	\$43.32	\$38.79	\$61.76	14,034
SISKIYOU	25,110.82	\$2,133.03	\$18.70	\$49.70	\$33.50	\$64.50	3,108
VOLCANO	21,220.38	\$1,939.67	\$20.35	\$35.91	\$30.24	\$45.81	4,407
WEST COAST	22,180.74	\$1,472.59	\$14.60	\$64.47	\$25.85	\$75.72	13,810
WINTERHAVEN	22,705.53	\$1,869.49	\$20.35	\$31.96	\$28.79	\$40.39	1,865

**SAMPLE CPM SUMMARY REPORT:****CBGs**

Cost Proxy Model:Universal Service Edition  
STATE AVERAGE  
CENSUS BLOCK GROUP SPECIFIC DATA

CENSUS BLOCK GROUP	CABLE LENGTH (ft)	INVESTMENT (\$/line)	REVENUE (\$/line/mo)	OPERATING EXPENSE (\$/line/mo)	CAPITAL COST (\$/line/mo)	SUBSIDY (\$/line/mo)	LINES
60014511002	53,429.72	\$8,324.75	\$20.35	\$33.19	\$112.15	\$124.99	57
60470001002	53,105.91	\$4,122.76	\$20.35	\$33.19	\$58.13	\$70.97	4
60470002001	35,545.30	\$2,734.15	\$20.35	\$33.19	\$40.52	\$53.36	123
60470002002	13,471.06	\$1,429.22	\$20.35	\$33.19	\$22.56	\$35.40	92
60470002006	12,015.71	\$1,352.38	\$20.35	\$33.19	\$21.38	\$34.22	12
60470003011	5,956.07	\$770.76	\$20.35	\$33.19	\$13.55	\$26.38	377
60470003012	4,804.18	\$582.73	\$20.35	\$33.19	\$10.93	\$23.77	394
60470003013	13,391.98	\$1,469.31	\$20.35	\$33.19	\$23.61	\$36.44	230
60470003021	27,437.57	\$2,425.62	\$20.35	\$33.19	\$36.89	\$49.73	355
60470003022	10,805.52	\$1,168.68	\$20.35	\$33.19	\$19.19	\$32.02	905
60470003023	637.85	\$364.21	\$20.35	\$33.19	\$8.04	\$20.88	422
60470003024	3,915.07	\$545.90	\$20.35	\$33.19	\$10.44	\$23.28	323
60470003025	5,603.57	\$750.61	\$20.35	\$33.19	\$13.28	\$26.11	157
60470003026	6,680.99	\$692.44	\$20.35	\$33.19	\$12.37	\$25.21	172
60470004005	34,032.45	\$2,373.59	\$20.35	\$33.19	\$35.74	\$48.57	4
60470005013	21,887.45	\$2,159.96	\$20.35	\$33.19	\$33.63	\$46.47	16
60470005014	22,452.77	\$2,040.94	\$20.35	\$33.19	\$31.89	\$44.73	24
60470005015	28,075.15	\$2,306.90	\$20.35	\$33.19	\$35.19	\$48.03	184
60470005022	35,161.02	\$2,364.15	\$20.35	\$33.19	\$35.52	\$48.35	40
60470005023	30,001.52	\$2,304.40	\$20.35	\$33.19	\$35.04	\$47.88	134
60470009001	47,265.67	\$3,538.87	\$20.35	\$33.19	\$50.64	\$63.47	59
60470301003	18,748.65	\$2,069.53	\$20.35	\$33.19	\$32.58	\$45.41	12
60855127982	38,093.49	\$6,691.97	\$20.35	\$33.19	\$92.52	\$105.35	27
60855135963	33,915.67	\$5,901.16	\$20.35	\$33.19	\$83.06	\$95.90	1
60855135973	38,350.92	\$6,409.14	\$20.35	\$33.19	\$89.29	\$102.12	0
60855135983	43,372.23	\$6,984.26	\$20.35	\$33.19	\$96.34	\$109.17	1
60990032001	5,525.25	\$631.43	\$20.35	\$33.19	\$11.57	\$24.41	954
60990032002	2,829.53	\$484.97	\$20.35	\$33.19	\$9.64	\$22.47	925
60990032003	6,465.07	\$679.72	\$20.35	\$33.19	\$12.20	\$25.04	481
60990032004	3,203.24	\$465.58	\$20.35	\$33.19	\$9.32	\$22.16	750
60990032005	7,140.45	\$733.72	\$20.35	\$33.19	\$12.93	\$25.77	356
60990032007	4,470.91	\$614.98	\$20.35	\$33.19	\$11.39	\$24.23	698
60990033981	15,741.49	\$1,835.04	\$20.35	\$33.19	\$28.37	\$41.20	369
60990033982	11,530.48	\$1,478.43	\$20.35	\$33.19	\$23.71	\$36.55	234
60990033983	53,385.84	\$4,743.18	\$20.35	\$33.19	\$67.11	\$79.94	34
60990033984	16,359.45	\$2,297.12	\$20.35	\$33.19	\$35.09	\$47.93	90
60990033985	15,712.35	\$1,657.58	\$20.35	\$33.19	\$26.32	\$39.16	484
60990033986	19,769.98	\$2,002.50	\$20.35	\$33.19	\$31.15	\$43.99	307
60990033987	12,232.60	\$1,457.25	\$20.35	\$33.19	\$22.84	\$35.67	15
60990034981	30,300.51	\$2,519.14	\$20.35	\$33.19	\$37.96	\$50.79	54
60990034982	20,742.88	\$2,395.66	\$20.35	\$33.19	\$36.77	\$49.61	7
60990041972	38,350.92	\$6,409.14	\$20.35	\$33.19	\$89.29	\$102.12	0

**SAMPLE CPM SUMMARY REPORT:****CENTRAL OFFICE**

Cost Proxy Model: Universal Service Edition  
STATE AVERAGE  
CLLI SPECIFIC DATA - ALL COMPANIES

CLLI	CABLE LENGTH (ft)	INVESTMENT (\$/line)	REVENUE (\$/line/mo)	OPERATING EXPENSE (\$/line/mo)	CAPITAL COST (\$/line/mo)	SUBSIDY (\$/line/mo)	LINES
ABRYCAXF	37,269.10	\$2,801.43	\$21.35	\$60.51	\$43.70	\$82.86	2,672
ACTNCA11	17,396.98	\$1,960.19	\$13.97	\$12.05	\$28.63	\$26.71	2,072
ADINCAXF	7,628.03	\$1,286.03	\$21.35	\$18.30	\$19.66	\$16.61	154
ADLNCAXF	11,991.70	\$1,225.39	\$20.35	\$19.73	\$18.87	\$18.25	6,396
AGDLCA11	22,855.24	\$2,180.23	\$13.97	\$12.05	\$31.52	\$29.60	1,146
AGORCA11	15,477.39	\$1,105.86	\$13.97	\$12.05	\$17.10	\$15.18	21,474
ALBYCA11	8,258.29	\$607.32	\$13.97	\$12.05	\$9.67	\$7.75	31,773
ALGHCA11	18,442.28	\$2,081.46	\$13.97	\$12.05	\$30.03	\$28.11	29
ALHBCA01	9,337.44	\$619.30	\$13.97	\$12.05	\$9.92	\$8.00	42,418
ALMDCA11	9,802.15	\$651.31	\$13.97	\$12.05	\$10.42	\$8.50	33,902
ALPGCAXF	5,156.17	\$961.41	\$20.35	\$19.73	\$15.21	\$14.59	342
ALPICA12	20,671.44	\$1,743.65	\$13.97	\$12.05	\$25.26	\$23.34	7,292
ALPNCAXF	15,324.46	\$3,263.25	\$20.35	\$19.73	\$47.33	\$46.71	80
ALTRCAXF	27,695.47	\$1,863.20	\$21.35	\$18.30	\$27.09	\$24.04	1,911
ANCMCA01	14,830.64	\$1,607.79	\$13.97	\$12.05	\$23.51	\$21.59	2,207
ANGWCA11	13,908.45	\$1,750.99	\$13.97	\$12.05	\$25.22	\$23.30	1,464
ANHMCA01	13,513.97	\$827.07	\$13.97	\$12.05	\$13.25	\$11.33	61,845
ANHMCA11	11,354.65	\$718.98	\$13.97	\$12.05	\$11.53	\$9.61	55,951
ANHMCA12	6,319.21	\$534.58	\$13.97	\$12.05	\$8.54	\$6.62	6,667
ANNPCA11	13,903.41	\$2,742.57	\$13.97	\$12.05	\$39.58	\$37.66	129
ANTCCA11	11,212.81	\$782.23	\$13.97	\$12.05	\$12.39	\$10.47	28,079
ANZACAXF	58,821.12	\$3,569.78	\$20.75	\$15.59	\$49.57	\$44.41	3,359
APTSAL2	11,132.49	\$897.96	\$13.97	\$12.05	\$13.92	\$11.99	10,671
APVYCAXF	16,013.77	\$1,001.98	\$20.35	\$19.73	\$16.30	\$15.69	15,821
ARBCCA11	12,495.08	\$1,377.56	\$20.35	\$38.68	\$22.53	\$40.87	1,218
ARCDCA11	10,631.33	\$783.34	\$13.97	\$12.05	\$12.60	\$10.68	21,042
ARCTCA11	10,736.66	\$878.68	\$13.97	\$12.05	\$13.53	\$11.61	8,921
ARGRCA12	13,560.73	\$1,019.06	\$13.97	\$12.05	\$15.70	\$13.78	17,961
ARHDCAXF	10,983.53	\$1,176.20	\$20.75	\$15.59	\$17.88	\$12.72	2,250
ARMSCA11	13,400.28	\$1,686.98	\$13.97	\$12.05	\$25.01	\$23.09	892
ARNLCA11	14,596.48	\$1,444.73	\$13.97	\$12.05	\$21.20	\$19.28	2,840
ARSNCA11	13,757.92	\$1,263.03	\$13.97	\$12.05	\$18.83	\$16.90	8,352
ARTNCA11	15,009.36	\$932.13	\$13.97	\$12.05	\$14.73	\$12.81	47,288
ARTSCAXF	10,992.53	\$711.71	\$20.75	\$15.59	\$11.69	\$6.53	32,814
ARVNCA11	7,044.68	\$876.85	\$13.97	\$12.05	\$13.25	\$11.33	3,655
ASMTCA11	28,429.33	\$4,611.51	\$13.97	\$12.05	\$62.85	\$60.93	133
ATSCCA11	12,523.55	\$962.77	\$13.97	\$12.05	\$14.87	\$12.95	11,309
ATWRCA12	11,615.93	\$871.50	\$13.97	\$12.05	\$13.60	\$11.68	14,858
AUBNCA01	19,789.79	\$1,245.76	\$13.97	\$12.05	\$19.05	\$17.13	17,537
AUBNCA11	13,419.13	\$1,384.08	\$13.97	\$12.05	\$20.62	\$18.70	4,228
AVBHCA11	11,020.16	\$1,555.96	\$13.97	\$12.05	\$22.77	\$20.85	830
AVLNCA11	5,979.25	\$738.69	\$13.97	\$12.05	\$11.26	\$9.34	1,685
AVNLCA12	14,062.60	\$1,004.28	\$13.97	\$12.05	\$14.63	\$12.71	2,574
AZUSCAXF	14,693.83	\$826.97	\$20.75	\$15.59	\$13.46	\$8.30	25,263
BAKRCA11	42,085.77	\$8,098.01	\$13.97	\$12.05	\$107.96	\$106.04	6
BALBCA01	9,558.51	\$662.19	\$13.97	\$12.05	\$10.27	\$8.35	5,555
BBCYCAXF	12,303.28	\$1,252.51	\$20.35	\$19.73	\$19.27	\$18.65	2,809
BBLKCAXF	15,986.56	\$1,425.14	\$20.35	\$19.73	\$21.87	\$21.25	5,176
BCWYCA11	9,035.44	\$864.40	\$13.97	\$12.05	\$13.36	\$11.44	2,462
BDBCA11	13,548.96	\$1,586.87	\$13.97	\$12.05	\$23.36	\$21.43	693
BDGRCAXF	10,928.01	\$2,568.43	\$20.75	\$15.59	\$36.88	\$31.72	141
BEALCA11	30,658.47	\$2,257.37	\$13.97	\$12.05	\$32.54	\$30.62	1,530
BELLCA11	6,686.92	\$499.79	\$13.97	\$12.05	\$8.08	\$6.16	26,255
BELRCAXF	10,955.64	\$788.65	\$20.75	\$15.59	\$12.69	\$7.53	9,936
BGCKCAXF	9,790.62	\$1,328.37	\$21.35	\$60.51	\$23.56	\$62.71	47
BGGSCA11	9,953.53	\$1,258.07	\$13.97	\$12.05	\$18.81	\$16.89	1,182
BGPICAXF	5,174.66	\$736.87	\$20.35	\$19.73	\$11.96	\$11.35	733
BGSRCA11	54,312.55	\$3,356.95	\$13.97	\$12.05	\$46.15	\$44.23	364
BGVLCA11	26,688.25	\$4,866.56	\$13.97	\$12.05	\$67.69	\$65.77	126

# Cost Proxy Model Presentation of Methodology

*given by*

*INDETEC International  
and  
Pacific Bell*

*May 30-31, 1996*

# Cost Proxy Model

## Significant Design Features

- ⇒ CPM is Efficient and Easy to Use
- ⇒ Based on a Consistent/Uniform Unit of Geography
- ⇒ Accurately Assesses Density for Sizing Plant
- ⇒ Separates Operating Expenses From Investment
- ⇒ Separately Develops Structure Costs
- ⇒ Accounts for Efficiency of LEC Size
- ⇒ Based on Sound Economic, Financial , and Management Accounting Principles.
- ⇒ Provides a Superior Estimate of The TSLRIC of Universal Service

# Cost Proxy Model

## Customer Engine: The “Grid” Vs CBG

### ⇒ Size

- ⇒ There are Approximately 22,000 Census Block Groups in California
- ⇒ There are Approximately 350,000-400,000 Census Blocks in California
- ⇒ There are Approximately 6 Million Zip 4 Postal Points in California

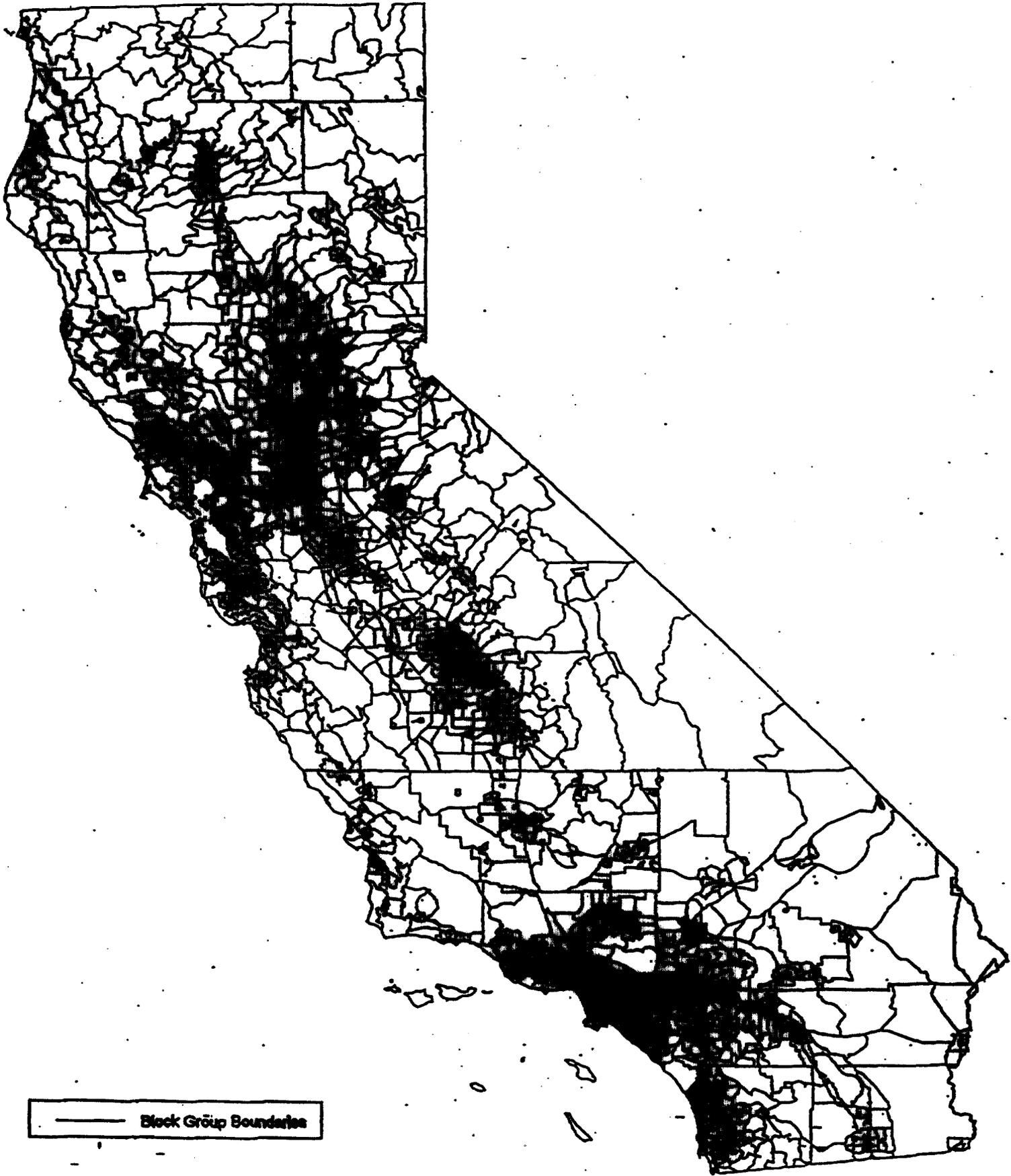
### ⇒ Flexible

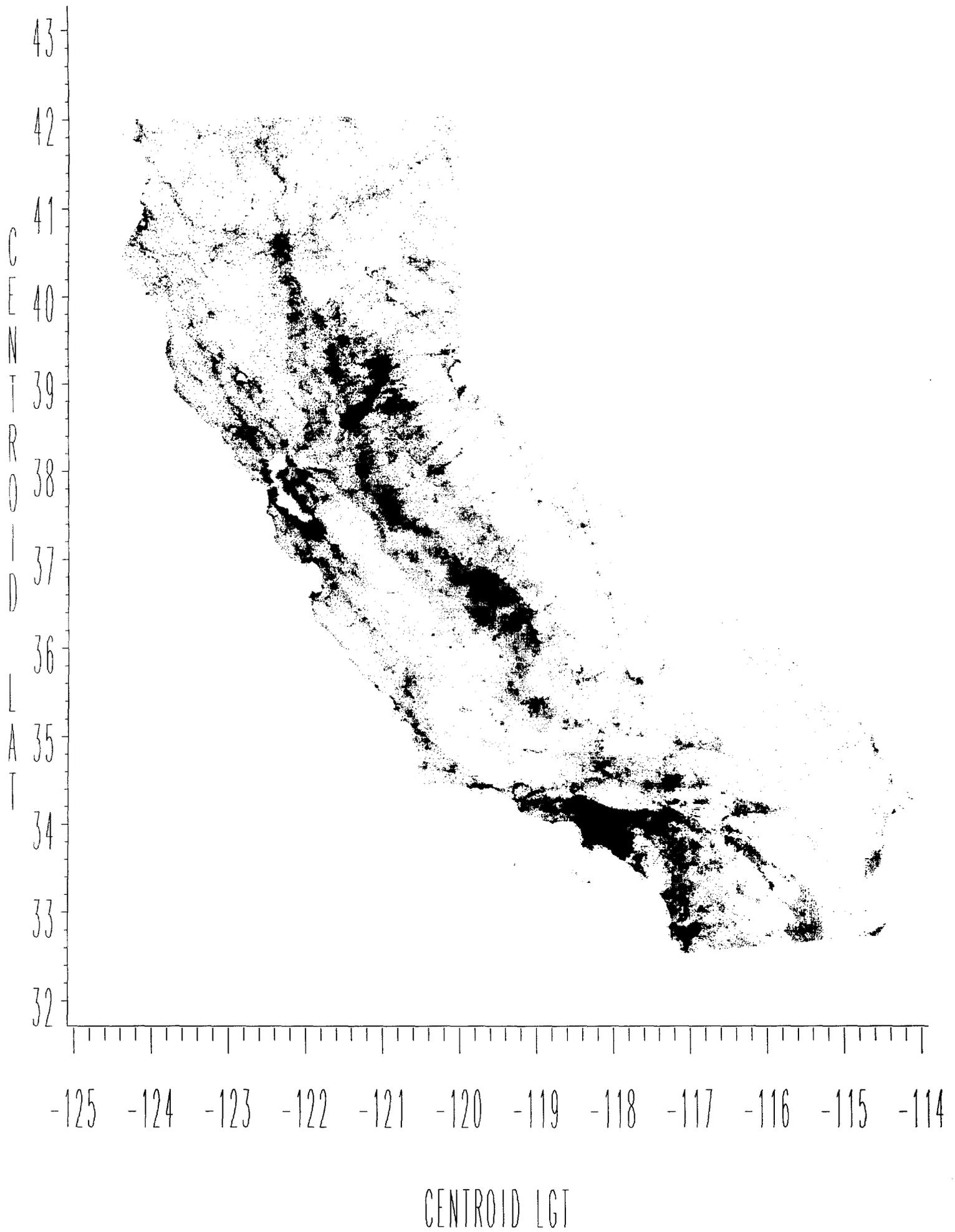
- ⇒ Various Dimensions are Attached
  - ⇒ CLLI, CBG, State, Political Boundaries, Density, Etc...
- ⇒ Other Dimensions are also Available
  - ⇒ Ethnicity, Income, Sex, Age, Etc...

### ⇒ Consistent/Uniform Unit of Geography

- ⇒ All Grids are ~0.4 Sqmi (~3000Ft X 3000Ft)

# BLOCK GROUP BOUNDARIES IN CALIFORNIA

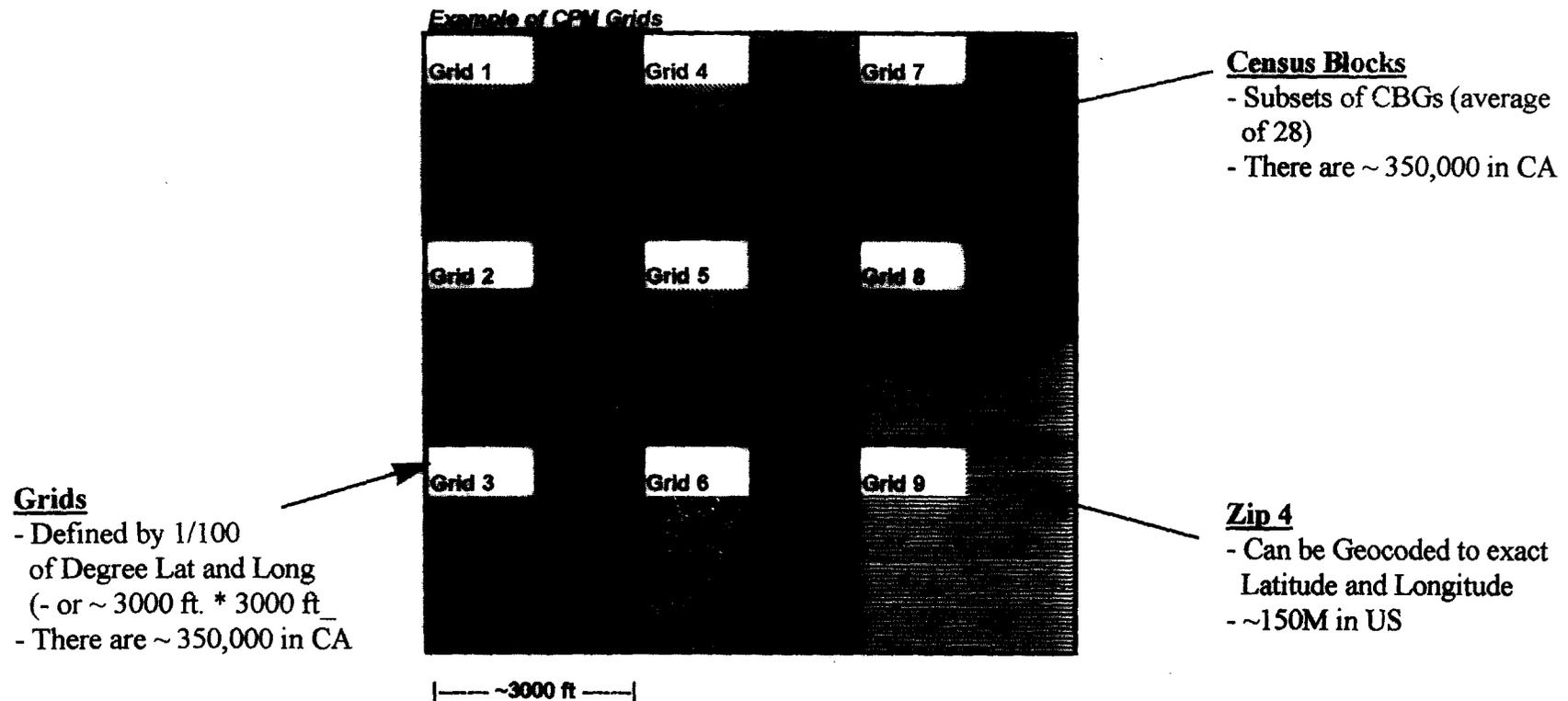




# Cost Proxy Model

## Customer Engine: The “Grid”, Part 1

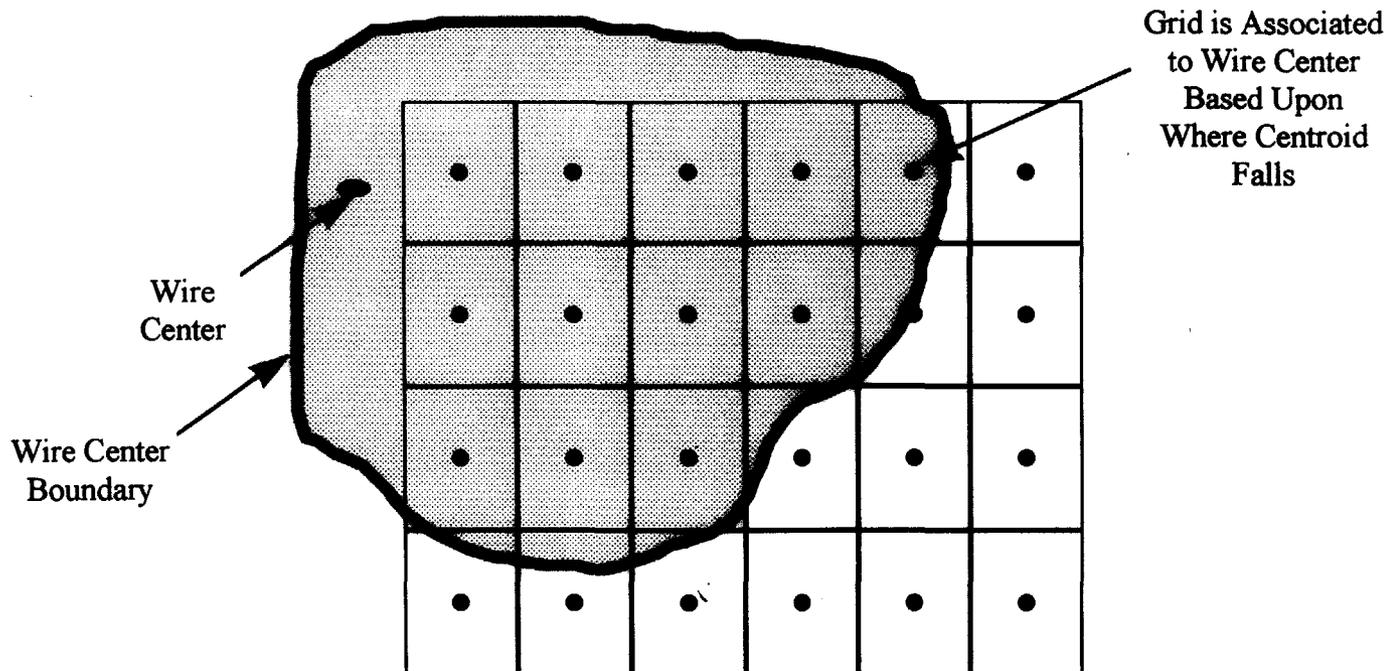
- ⇒ Current California Model uses Census Block Household data apportioned to “Grids” based on Land Mass
- ⇒ Currently developing improved file using Zip4 data Points as apportioning unit



# Cost Proxy Model

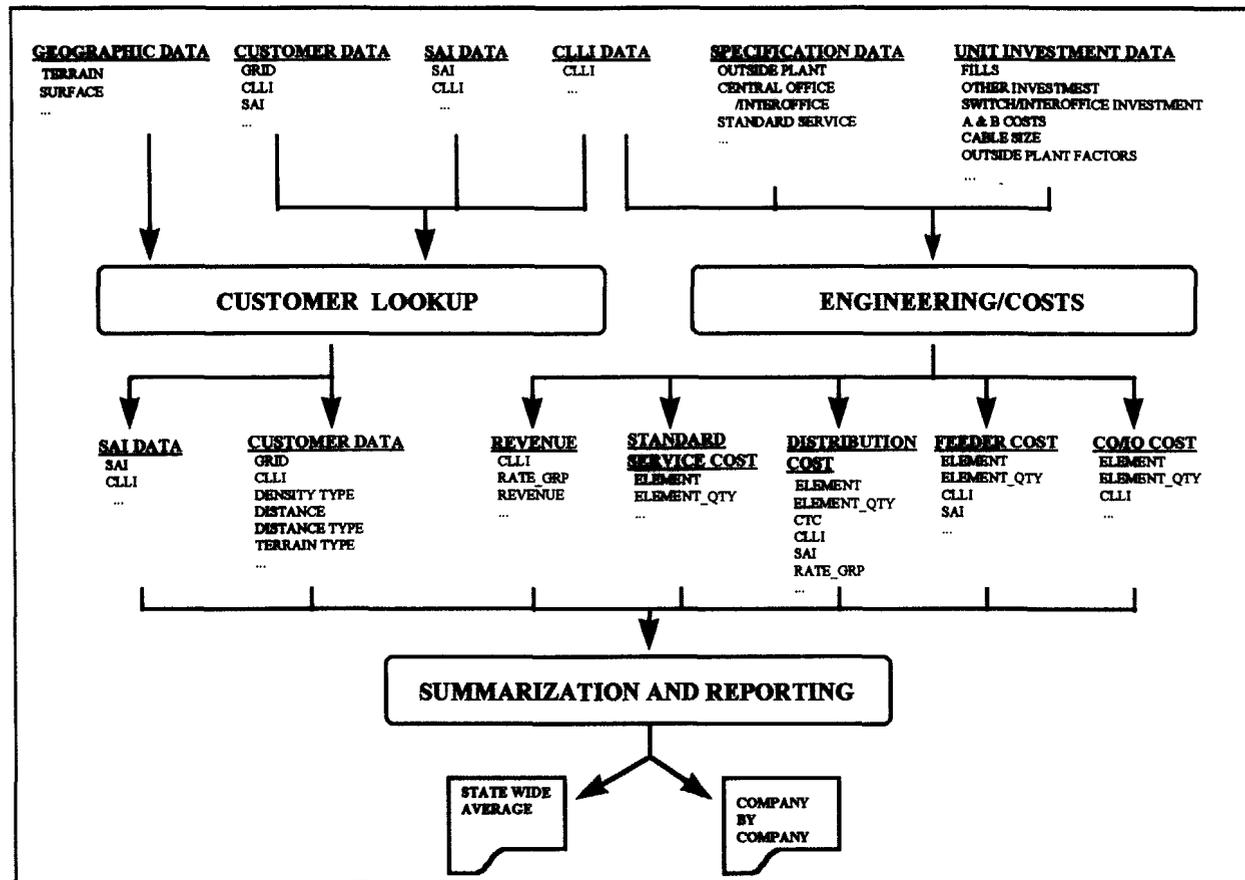
## Customer Engine: The “Grid”, Part 2

- ⇒ Commercial Data Source Provides Wire Center Boundaries Along With the Lata, NXX, Switch Type, Rate Center, and Company
- ⇒ Using the Boundary, We can Then Assign the “Grids” to a Wire Center



# Cost Proxy Model System Design

## Basic System Design



# Cost Proxy Model System Design

## Customer Lookup Engine

- **Customer:** The lookups for customer provide the terrain type, density type, and the conversion of the distance into a route distance.
- **SAI:** The lookups for SAI provide the terrain type, density type, technology type, and the conversion of the distance into a route distance.
- **CLLI:** The lookups for CLLI provide the density type and switch usage characteristics.

## Engineering/Costs Engine

Costs are unitized at the pertinent dimensional level (density type, terrain type, technology type, switch type, and distance). For example, aerial cable installed cost per foot/per month in a rural central office, in sandy soil, in a low density cell is \$0.05. Aerial cable installed cost per foot/per month in an urban central office, in bedrock, in a high density cell is \$0.25.

## Summarization and Reporting Engine

The SAI, customer, and all cost data is joined and summarized into files for reporting purposes. Detail and summary reports can be generated by company, state representative and senate districts, census block group, density type, terrain type, CLLI, and class of service. This model also generates a statewide average report.