

Telecommunications Master Plan



Prepared For

The City of Corona

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Prepared By

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A HOMETOWN CONNECTIONS BUSINESS PARTNER



Hometown Connections

PROVIDING COMPETITIVE ADVANTAGE TO PUBLIC POWERSM

Toms #

Telecommunications for Dos Lagos Renewals 25 March, 2004

Homes 750

Phones Long Distant 750 x \$20 =	\$25,500
Phones Long Distant 750 x \$20 =	\$15,000
Internet 750 x 30 =	\$22,500
FiberVision (Cable TV) 750 x \$60 =	\$45,000
Security Service \$25 / 45/60 at \$45 x 750 =	\$33,750
Sub Total <i>B B B 4 camera + 40R 4 weeks video</i>	\$141,750

Business Park 95 Tenants

Bus. Phones Small business ave. \$543 per month info=Tom P.x 95 Tenants	\$51,585
Fiber T1 normal cost \$600 per month ours \$300 included in monthly lease	\$28,500
Security \$60 x 95 tenants = <i>40 70 100</i>	\$5,700
Sub Total <i>B A V</i>	\$85,785

Safty Glass Security

Convention Center Hotel 280 Rooms

2 Phone lines per Room \$19 each = \$38 x 280 rooms =	\$10,640
FiberVision to each room cost about \$20.00 per month x 1.75 factor = \$35/	11,730
Fiber Internet and WIFI \$10 x 280 = \$2,800	\$84,000
Security Wifi ? <i>80000 manager</i>	\$500 ?
Sub Total <i>40,000 officer</i>	\$106,870

5 Restaruants

Phones \$1,000 each	\$5,000
FiberVision Sports Bars Monthly Fee \$70 per mo.	\$350
NFL Sports Package Annual fee \$2,500 X 2 = ?	\$416
NBA Basketball \$599 X 2 = ?	\$100
MLB Extra Innings \$599 X 2 = ?	\$100
Collage Football \$399 X 2 = ?	\$67
Collage Basketball \$99 X 2 = ?	\$17
NHL Hocky \$599 X 2 = ?	\$100
Security \$100 x 5 =	\$500
Sub Total	\$6,650

Life Style Mall

Phones \$135 x 3 phone lines = \$405 per mo. X 80 Tenants =	\$32,400
Fiber T1 normal cost \$600 per month ours is included in the lease	\$24,000
Securityby Sq. Ft. ave. \$250 x 80 Tenants =	\$20,000
Sub Total	\$76,400

Golf and Country Club and Spa /180 Rooms

Phones 180 x 2 = 360 + 40 = 400 x \$19 =	\$7,600
FiberVision (see above hotel) income per room x 180 =	\$2,700
Security	\$500 ?
Sub Total	\$10,800

Total Monthly Renewals \$428,255

6-8. ATM Fee + Brinks Diebolt 3%.

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1. Executive Summary

The purpose of this study was to evaluate the best possible telecommunications strategy for the City of Corona. The evaluation process focused on the competitive telecommunications environment in Corona and the relative strengths and weaknesses of the city vs. the competition. The report looked at several alternatives available to the city in the telecommunications industry from reselling other providers' services to building and operating a network capable of delivering voice, video and data services to homes and businesses.

A Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis was completed for this study. The city's primary weakness is the overall lack of retail telecommunications and the main threat posed by any telecommunications strategy is the potential for larger than expected cash deficits. Opportunities for the city include improved quality of life, the ability to attract high-end businesses and a reduced revenue requirement (lower taxes). This qualitative analysis showed that the city's strengths outweighed their weaknesses and the opportunities outweighed any threats.

The primary research completed for this assessment has shown that Corona residential and business customers are generally satisfied with the telecommunications services they receive from their given providers. Survey results show that no measurable gaps exist between current customer needs and the level of current service provider performance. With a few exceptions, the Corona business market appears to be well served by the existing telecommunications service providers.

A comprehensive competitive assessment shows that Corona is currently well served by the cable and local telephone providers. AT&T Broadband is offering advanced digital cable and high-speed Internet services and Pacific Bell is currently offering all of the latest telephone and Internet access services in Corona. Based on the advanced nature of the current offerings from AT&T Broadband and Pacific Bell, the only way for the city to create and maintain long term competitive advantage will be to construct a network far superior to the ones operated by the incumbent providers.

Uptown identified six primary gaps between market needs and current telecommunications capabilities in Corona.

1. No viable competitors to AT&T Broadband and PacBell for consumer and small business services.
2. No viable competitors to PacBell for high capacity fiber services for medium and large businesses.
3. No major telecommunications hub in Corona.
4. City department bandwidth requirements are outstripping resources
5. Limited city owned fiber capacity for internal departments.
6. Cellular phone coverage is spotty throughout the city.

Uptown evaluated seven strategy alternatives for the city to consider. These alternatives were developed to close the gaps identified in the gap analysis phase of this project. While there was no gap identified as such, the option of building and operating a full service network was added for illustrative purposes. The following strategy alternatives were evaluated by Uptown:

1. Upgrade city telecommunications network to streamline existing systems and improve overall communication capabilities between city departments.
2. Offer high capacity fiber-based services to large businesses in Corona.
3. Create a major telecommunications hub in Corona.
4. Install Fiber Microduct System
5. Resell residential and commercial services from city approved service providers.
6. Build, own and operate a Hybrid Fiber Coax (HFC) network to provide retail residential and commercial services.
7. Build, own and operate a Fiber to the Home (FTTH) network to provide retail residential and commercial services.

Of the seven strategy alternatives described above, three made sense from a qualitative perspective and four did not. Uptown's final recommendations are as follows:

1. Upgrade city network
2. Install fiber microduct system
3. Pursue FTTH business case further
4. Do not pursue product resale plan
5. Do not construct an HFC network
6. Do not build a local telecom exchange
7. Do not offer fiber based services to large businesses

2. Scope and Methodology

Uptown was asked to use the following process for this project:

- Identify the present and future uses of telecommunications services, and telecommunications needs, preferences and price sensitivities for all market segments in the community.
- Identify the current services and capabilities available in the Corona market.
- Compare identified needs with the current capabilities.
- Identify gaps between needs and capabilities.
- Develop strategy alternatives that close identified gaps.
- Recommend appropriate steps for moving forward.

Uptown used a variety of research methods to perform the needs assessment phase of this project. Telephone surveys were completed for the residential and business markets. Interviews were conducted with large businesses, institutions and city departments.

Uptown used secondary and primary research methods to collect information related to the telecommunications service providers in Corona. The information gathered during these interviews was augmented by data available on each provider's corporate web site.

Uptown performed the gap analysis by comparing the needs identified from research and interview participants with the provider information gathered during the industry analysis phase. Current and future needs were summarized for each segment and contrasted with the current capabilities and future plans for each group of wireline and wireless providers. Material differences were flagged and identified as gaps for further analysis and consideration in the strategy development phase of the assessment.

Uptown developed strategy alternatives to fill the majority of the gaps identified in the gap analysis phase of the assessment. In some cases, it was not possible to close gaps economically or technically. Uptown applied its knowledge of the telecommunications industry, technology, operations, and other municipal efforts to develop the most reasonable strategies for the city to consider.

Recommendations were made based on qualitative analysis for each strategy. This analysis considered several critical success factors for each alternative including the use of city assets, public policy issues, legal limitations, operational issues, technical capabilities, financial impacts, competitive environment, marketing requirements, and fundamental public interest arguments. Strategy alternatives that were found to make sense based on this underlying analysis were recommended to the city.

3. Telecommunications Business Objectives

The City of Corona articulated several specific objectives for any potential telecommunications based venture. Uptown used these objectives as the measuring stick for all strategy recommendations. Objectives vary from utility to utility. Corona's general objective is to maximize the telecommunications opportunities for the residents and businesses of the community by:

- Ensuring that innovative telecommunications services are available to attract and retain top companies.
- Strengthening the local community by connecting strategic partners through a telecommunications network.
- Improving residential services to allow more people to work from home.
- Better connecting public facilities and municipal groups.
- Generally positioning Corona as a telecommunications gateway, connecting Southern California with Corona as a hub.

These objectives are very similar to those public power utilities that have already made the decision to get into the telecommunications business.

4. Needs Assessment

Uptown was asked to complete a comprehensive needs assessment for the residential and business market segments in the Corona area. Primary market research is always the best approach for projecting demand levels for new services. Uptown retained Satisfaction Development Systems (SDS) to conduct a market survey to determine satisfaction levels and current buying habits of Corona residents and businesses. This study targeted 400 residences and 350 businesses and received 429 residential and 337 commercial responses. Based on these response rates measured against the overall population of Corona, the city can expect a 95% confidence factor in the results of the study.

The following section is a summary of the survey results along with a comparative analysis of the overall Corona population. The complete survey results are attached in the Appendix of this report.

4.1. Corona Residential Market Overview

Uptown used the latest United States Census figures to gain perspective on how the residential Corona market might respond to new telecommunications services offered by the city. Certain statistics are useful in determining the likelihood of service adoption by certain market segments. These include income or home ownership, households with children and homeowner age. This section details the specifics for Corona.

4.1.1. Census 2000 Findings

According to the research, the average home price in Corona is approximately \$280,000 for a new home and \$195,000 for existing homes. 67% of Corona's housing units are owner occupied. Just over 80% of households contain families, and married couples head 79% of family households. Just 4% of householders are over the age of 65 and the median age of a Corona resident is just 29.9 years. Corona has an interesting combination of a generally young population that garners a relatively high average household income (\$74,000). It's well known that younger consumers are more willing to try new products or technologies and are less emotionally tied to their incumbent providers.

Table 1 – Corona Demographic Data Comparison

	Corona Survey	Corona Census	County Census	CA State Census	National Census
Home Ownership	NA	67%	69%	57%	66%
Age Distribution					
Under 25	8%	42.2%	39.5%	37.2%	35.3%
25-60	71%	52.1%	44.3%	52.1%	52.3%
Over 60	21%	5.7%	16.2%	10.7%	12.4%

The most noticeable detail is the large discrepancy in the age distribution of respondents for the residential survey results, as compared to the city's census data. This can likely be attributed to the concept of the household decision maker (or bill payer) providing the answers to the survey in a household with younger children.

Corona's demographic mix should be very appealing to a provider of competitive telecommunications services. The large number of family households with school age children represents a target market for technically advanced services like high-speed Internet and additional telephone lines.

4.2. Residential and Business Primary Market Research

Uptown used a variety of primary research methods to complete this portion of the study. SDS was hired to perform telephone surveys with the residential and general business markets and Uptown conducted interviews with several of Corona's leading employers. The results of these efforts are outlined next.

4.2.1. Residential and Business Summary

SDS utilized telephone surveys to research the telecommunications related needs, wants and complaints of the residential and business market segments. Survey results show high levels of overall satisfaction with local providers of voice, video and data services in Corona. Survey results show that no major measurable gaps exist between current customer needs and the level of current service provider performance. Findings from each research effort are outlined next.

4.2.2. Residential Telephone Survey

SDS completed a telephone survey of 429 Corona residents in July 2002. Survey subjects were selected at random from a regional phone directory. The survey contained a total of 34 questions addressing a variety of telecommunications and demographic areas.

Corona research participants indicate that their communications needs are being met and survey results show no significant level of dissatisfaction with the number of providers or the available service choices. Fewer than 5% of respondents said they were unsatisfied with their local telephone, long distance telephone, or wireless service. It was less than 10% that were unsatisfied with Internet or cable television service. But even with these relatively high satisfaction levels, almost a third of the respondents were either very likely or likely to switch to city provided local, long distance, cable television or Internet services. Almost half of the respondents stated that price is the key factor in making telecommunications decisions. These results are consistent with the research SDS has conducted for other municipal clients and offers the city some key insights for possible product lines to offer Corona consumers and how to best differentiate from the incumbent providers.

4.2.3. Business Telephone Survey

SDS completed a telephone survey of 337 Corona businesses in July 2002. Survey subjects were selected at random from a regional phone directory. The survey contained a total of 26 questions addressing a variety of telecommunications issues.

Corona research participants indicate that their communications needs are being met and survey results show no significant level of dissatisfaction with the number of providers or the available service choices. Fewer than 5% of respondents said they were unsatisfied with their local telephone and long distance telephone service. It was less than 10% that were unsatisfied with Internet or wireless service. Almost a third of the respondents were either very likely or likely to switch to city provided local telephone service. About a quarter of respondents showed the same likelihood to switch to long distance, wireless or Internet services. Half of the respondents stated that price is the key factor in making telecommunications decisions. These results are consistent with the research SDS has conducted for other municipal clients and offers

the city some key insights for possible product lines to offer Corona businesses and how to best differentiate from the incumbent service providers.

4.2.4. Demand Summary

This section will analyze the results of the residential and commercial surveys. The following data on satisfaction levels and attitudes gives an initial snapshot of potential adoption rates. Uptown traditionally targets a 30% penetration rate for utility offered services in order to achieve reasonable returns.

4.2.4.1. Residential Survey Results

It's necessary to make some basic assumptions when analyzing this type of quantitative data. Current penetration rates can be extrapolated from the survey responses but will have some degree of variability. Uptown assumes 100% market penetration for local and long distance phone service. In calculating potential penetration, the conversion rates listed in Table 1 are applied. As an example, the city would capture 75% of the market that is deemed 'Very Likely' to switch to a city provided service with rates comparable to their current service.

Table 2 – Residential Survey Conversion Rates

Response	Conversion Rate
Very Likely	75%
Likely	50%
Not Likely	0%
Not Sure	10%

4.2.4.1.1. Local Phone Services

This section's data is taken from answers to questions 1 - 4 of the residential survey.

Table 3 – Local Phone Service Ratings

Response	Survey Results
Excellent	32%
Good	58%
Fair	8%
Poor	3%

Table 4 – Interest in Receiving Local Telephone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	12%	75%	9%
Likely	24%	50%	12%
Not Likely	25%	0%	0%
Not Sure	39%	10%	4%
Total			25%

The high satisfaction levels shown in Table 3 for local telephone service (90%) may explain the relatively low penetration projections listed in Table 4 for a city offered service. Additionally, only 4% of respondents said they were unsatisfied with the current local choices for local phone service.

4.2.4.1.2. Long Distance Phone Services

This section's data is taken from answers to questions 5 - 9 of the residential survey.

Table 5 – Long Distance Service Ratings

Response	Survey Results
Excellent	32%
Good	58%
Fair	9%
Poor	2%

Table 6 – Interest in Receiving Long Distance Telephone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	10%	75%	7%
Likely	25%	50%	13%
Not Likely	34%	0%	0%
Not Sure	32%	10%	3%
Total			23%

The high satisfaction levels for long distance listed in Table 5 were identical to those for local service and also might explain the relatively low penetration projections in Table 6 for a city offered service. In this case, only 3% of respondents said they were unsatisfied with the current local choices for long distance service.

4.2.4.1.3. Internet Services

This section's data is taken from answers to questions 10 - 16 of the residential survey.

Table 7 – Internet Service Ratings

Response	Survey Results
Excellent	24%
Good	56%
Fair	16%
Poor	5%

Table 8 – Interest in Receiving Internet Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	9%	75%	7%
Likely	23%	50%	12%
Not Likely	43%	0%	0%
Not Sure	25%	10%	2%
Total			21%

The satisfaction level for Internet service listed in Table 7 isn't quite as high as with the telephone services, but is still very high at 80% and again led to the low penetration projections listed in Table 8 for a city offered service. In this case, 8% of respondents said they were unsatisfied with the current local choices for Internet service and 93% say their Internet provider has all the options they need.

The survey was able to determine that 39% of respondents that are Internet users are utilizing some kind of broadband connection (DSL-20%, Cable Modem-17% or Wireless/Satellite-2%).

4.2.4.1.4. Video Services

This section's data is taken from answers to questions 17 - 22 of the residential survey.

Table 9 – Cable Video Service Ratings

Response	Survey Results
Excellent	18%
Good	56%
Fair	23%
Poor	4%

Table 10 – Satellite Video Service Ratings

Response	Survey Results
Excellent	41%
Good	44%
Fair	12%
Poor	2%

Table 11 – Interest in Receiving Video Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	11%	75%	8%
Likely	22%	50%	11%
Not Likely	40%	0%	0%
Not Sure	28%	10%	3%
Total			22%

Cable television subscribers express the lowest level of satisfaction among all services that were surveyed. While lowest among all services, cable still turned in a 74% overall satisfaction rating. Satellite video satisfaction levels are much higher at 85%. For overall video services 11% of respondents said they were unsatisfied with the current local choices.

4.2.4.1.5. Wireless Phone Services

This section's data is taken from answers to questions 23 - 28 of the residential survey.

Table 12 – Wireless Phone Service Ratings

Response	Survey Results
Excellent	28%
Good	52%
Fair	15%
Poor	5%

Table 13 – Interest in Receiving Wireless Phone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	7%	75%	5%
Likely	21%	50%	10%
Not Likely	44%	0%	0%
Not Sure	28%	10%	3%
Total			18%

For wireless services, general satisfaction levels were 93%, the highest total yet. Only 6% of respondents said they were unsatisfied with the current local choices. This is not surprising when you consider the number of national wireless providers in the marketplace.

4.2.4.1.6. Residential Survey Summary

Based on the research results for the residential community in Corona, the city would find it difficult to achieve the penetration rates generally deemed necessary to support any new telecommunications venture. It should be noted, however, that this data is only an initial analysis

and does not take into account any marketing or public relations efforts that could further soften the market for any potential residential services.

4.2.4.2. Commercial Survey Results

The assumptions outlined in the residential survey also apply to the commercial marketplace. Current penetration rates can be extrapolated from the survey responses but will have some degree of variability. In calculating potential penetration, the following conversion rates are applied. As an example, the city would expect 75% of the market that is deemed 'Very Likely' to switch to a city provided service with rates comparable to their current service.

Table 14 – Commercial Survey Conversion Rates

Response	Conversion Rate
Very Likely	75%
Likely	50%
Not Likely	0%
Not Sure	10%

4.2.4.2.1. Local Phone Services

This section's data is taken from answers to questions 1 - 5 of the commercial survey.

Table 15 – Local Service Ratings

Response	Survey Results
Excellent	30%
Good	62%
Fair	7%
Poor	1%

Table 16 – Interest in Receiving Local Telephone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	9%	75%	7%
Likely	22%	50%	11%
Not Likely	20%	0%	0%
Not Sure	49%	10%	5%
Total			23%

The high satisfaction levels displayed for local telephone service (92%) lead to low penetration projections for a city offered service. 99% of respondents said they were satisfied with the current local choices for local phone service and 3% don't think their current provider has all the options they need.

4.2.4.2.2. Long Distance Phone Services

This section's data is taken from answers to questions 6 - 10 of the commercial survey.

Table 17 – Long Distance Service Ratings

Response	Survey Results
Excellent	40%
Good	56%
Fair	4%
Poor	1%

Table 18 – Interest in Receiving Long Distance Telephone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	7%	75%	5%
Likely	19%	50%	10%
Not Likely	23%	0%	0%
Not Sure	51%	10%	5%
Total			20%

Again, 96% of commercial respondents are generally satisfied with their current long distance provider. Only 2% of respondents said they were unsatisfied with the current local choices for long distance service and 99% are satisfied with their carriers' options.

4.2.4.2.3. Wireless Phone Services

This section's data is taken from answers to questions 11 - 16 of the commercial survey.

Table 19 – Wireless Phone Service Ratings

Response	Survey Results
Excellent	40%
Good	47%
Fair	8%
Poor	4%

Table 20 – Interest in Receiving Wireless Phone Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	5%	75%	4%
Likely	15%	50%	7%
Not Likely	35%	0%	0%
Not Sure	45%	10%	5%
Total			16%

For wireless services, general satisfaction levels were 87% and only 4% of respondents said they were unsatisfied with the current local choices.

4.2.4.2.4. Internet Services

This section's data is taken from answers to questions 17 - 22 of the commercial survey.

Table 21 – Internet Service Ratings

Response	Survey Results
Excellent	29%
Good	57%
Fair	9%
Poor	5%

Table 22 – Interest in Receiving Internet Service from Corona

Response	Survey Results	Conversion Rate	Penetration
Very Likely	5%	75%	3%
Likely	17%	50%	9%
Not Likely	29%	0%	0%
Not Sure	48%	10%	5%
Total			17%

The satisfaction level for Internet service is again very high at 86% and leads to the potentially very low penetration levels for a city offered service. A total of 4% of respondents said they were unsatisfied with the current local choices for Internet service and 96% say their Internet provider has all the options they need.

The survey was not able to determine the penetration of broadband-based Internet subscribers and there are no other distinctions made specifically for broadband applications in the survey.

4.2.4.2.5. Commercial Survey Summary

Quite similar to the residential survey responses, the research results for the commercial community in Corona would find it difficult to achieve the penetration rates to support a new telecommunications venture. It should again be noted, however, that this data is only an initial analysis and does not take into account any marketing or public relations efforts that could further soften the market for any potential commercial services.

An interesting note from the commercial results is the surprisingly high number of 'Not Sure' responses for question 23 on the likelihood of purchasing telecommunications services from the city. This response ranged from 45-51% of all responses compared to 25-39% in the residential survey. The likely sources of this are the interviewing of non-decision makers in the company and the inclusion of non-subscribers, specifically Internet and wireless phone services, in the questioning.

4.3. Targeted Business / Technology Interviews

Uptown completed a total of 5 personal interviews from the leading private employers in the Corona area. Three separate attempts to contact Watson Pharmaceuticals, Golden Cheese, Circle Seal, R.W. Lyall and Core-Mark for interviews were unsuccessful. The interview targets were selected from a list provided by the city and a complete interview report is provided in the Appendix.

4.3.1. Large Business Summary

There are few very large employers in Corona. The most recent Corona Economic Development Profile shows only 4 private companies with over 500 employees: Watson Pharmaceuticals, Dart Container, Fender Guitar Museum and Kaiser Permanente. These four employers make up 5.5% of the total employment in Corona. The three largest employment sectors are manufacturing, construction and retail trade and accounted for 59% of the total market in 2000.

Uptown focused on the top 10 employers for the one-on-one business interviews. The commercial phone interviews conducted by SDS were random samples of the estimated 2,500 businesses in Corona that consisted primarily of smaller local businesses. This is often the case in these situations as it is usually easier to reach a decision maker or someone qualified to answer telecommunications usage questions in a smaller business. Unfortunately, many smaller businesses (restaurants, retail stores, manufacturing shops, etc.) more closely resemble the average residential consumer in regards to service usage. There is not much need for higher end, high capacity Internet connectivity in a small business environment. Many still utilize dial-up Internet connections with an additional, dedicated phone line.

Based on the results of the large business interviews, combined with the commercial phone survey results, Uptown believes that the Corona market is generally satisfied with available providers and services. Interview results for each company are summarized next.

4.3.2. Dart Container

Dart Container is a paper products manufacturer that employs over 650 in Corona. They are the third largest private employer in the city. Uptown spoke with Clint Quardrozzi, manager of Information Services. Dart currently uses PacBell and AT&T, respectively, for local and long distance telephone service. Clint is generally pleased with the service from both providers and Dart is a heavy user of long distance service to work with their customers and suppliers. The only current complaint is the high number of recent reliability issues with PacBell.

Dart does not have a corporate wireless plan in the Corona location. Clint explained that their site connects to the corporate LAN via proxy on a connection provided by PacBell. He was unaware of the exact capacity of this connection, but made it clear that the corporate office in Michigan dictated all major Internet and telephone service decisions.

Clint said that Dart was not likely to purchase any telecommunications services from the city. The main reasons for this are the lack of local decision-making ability for services and contracts with their existing providers.

4.3.3. Fender Guitar

Fender Guitar opened in 1997 and serves as a central attraction of the Main Street redevelopment area. Fender employs almost 700 people in Corona and is the second largest private employer in the city. Uptown spoke to Brian Goodnight, an IT manager in the Fender corporate office in Arizona. All inquiries with museum personnel were deferred to the Arizona office.

Fender uses PacBell for local service and MCI for long distance. At the time of the call, Brian was unsure about their plans, if any, to look for alternative vendors to replace WorldCom in light of recent events. He was generally satisfied with both providers in terms of service and available options.

Fender does not currently have a corporate wireless plan. Extreme Zone is their corporate ISP and they are currently using a T1-based service that they are satisfied with. Internet access is the only city offered service that Fender would consider utilizing if it were made available to them. Clearly, the corporate office makes all telecommunications decisions.

4.3.4. Kaiser-Permanente

Kaiser-Permanente is a major international healthcare corporation that operates a call center in Corona that employs about 500 people. Uptown spoke with Marie Kinney, an IT Project Manager in the Corona office.

Kaiser also uses PacBell for local phone service and MCI for long distance. As a customer care call center, there is an obvious demand for a large amount of telephony services. Marie expressed their satisfaction with both providers and their reluctance to switch with such a high reliance on telephony services. Kaiser's corporate telephony group is based in Pasadena and makes all the decisions on service providers and contracts.

This location for Kaiser currently has a corporate wireless plan with Verizon and Marie is satisfied with their service and features as well. She was unable to answer specific questions on their current Internet service but again deferred to their corporate office for details. Marie said that they were unlikely to purchase any city offered telecommunications services.

4.3.5. Western Homes

Western Homes is a local manufacturer of mobile homes that employs approximately 500 people in the Corona area. Uptown interviewed Jim Thomas, the Controller for Western Homes. This is primarily a manufacturing site and they have few distinct telecom needs aside from reliable phone service for contact with suppliers and customers.

As is the norm, Western Homes uses PacBell for local phone service and is generally satisfied with their current level of service and available options. There have been a few minor reliability issues with the service but none that have affected their business operations. Allegience provides their long distance service and Jim was very satisfied with their service.

Western Homes does not have a corporate cellular plan at this time but stated that the corporate office in Michigan is currently evaluating a national plan for all corporate locations. Sprint provides T1 service to this location and Jim is generally satisfied with them as a data provider. The primary data usage is for email and research on the competitive market by a handful of employees. DSL is not available to them at this location and Jim expressed an interest in alternative access options to lower their monthly data costs. He was generally unsure on his likelihood of purchasing telecom services from the city but mentioned that he would consider all available options on the basis of cost and reliability.

4.3.6. Uniweb

As a manufacturer of sheet metal products, Uniweb employs approximately 200 in the Corona market. Uptown spoke with John McDonald, VP and COO of Uniweb.

Again, PacBell is the local phone provider and John was very satisfied with the level of service and options available. AT&T provides long distance and corporate cellular service for Uniweb. John again expressed high satisfaction levels for AT&T on both services.

Uniweb has a PacBell DSL connection at their location that they find satisfactory. John's only complaint about the service was the lack of options for speeds and service levels. Otherwise, reliability hasn't been an issue for them.

John was unsure on his likelihood of purchasing telecom services from the city but also mentioned that he would consider all available options on the basis of services offered and overall cost structure.

4.4. City Departmental Interviews

Uptown interviewed representatives from several City to identify existing telecommunications usage and to determine how different telecommunications strategies might impact their respective departments.

Several common themes emerged including needs for increased bandwidth, and a single citywide networking solution. Many different methods are used to connect various city facilities to the City network including fiber, wireless, dial-up, leased line, direct phone lines, and ISDN. Most respondents projected increased bandwidth requirements in the future.

4.4.1. Departmental Summary

Each City department has its own set of unique needs, but they are all rooted in the basic needs for more bandwidth and a unified communication system. Interview summaries for each department are outlined next.

4.4.2. Utilities Department

According to George Hanson, General Manager of the Power Division, the City will focus on deploying electric service to green-field residential and commercial developments beginning in January 2003. Preparing for these future build-outs has not allowed George and his group enough time to focus on their communications needs at this point. They are currently researching potential meter tools, but no formative decisions had been made at the time of the interview.

Uptown interviewed Jonathon Daly from the Corona Water Division. Due to security requirements, he was unable to share some specific data on the city's current water sites and resources. He did however, express the clear need to connect their 6 major sites (3 water and 3

wastewater) for voice and data services. The Water Department is also currently housing two data servers in separate locations that could be centralized.

Since the city does not currently own the electrical rights of way, the discussion turned to the utilization of the existing sewer systems as the vehicle for laying the fiber infrastructure necessary to support internal and retail based telecommunications services. The city already owns a camera truck and has trained personnel for potential installations. This option will also be discussed in a later section of this report.

4.4.3. Fire Department

Uptown interviewed Bob German of the Corona Fire Department. Bob is also responsible for the telephone and cellular systems for all city departments.

The fire department operates 6 fire stations in Corona that utilize a number of varying platforms and technologies to manage their personnel and equipment. PacBell provides the majority of the connectivity with a DS3 for data traffic, leased T1's for voice and data, and traditional copper lines for voice. The department has investigated DSL service but consistent availability is an issue because of the single PacBell CO in Corona. Additionally, there is some city-owned fiber for some departments and 2 microwave towers in place to support a planned backbone to support VHF radio and 900Mhz voice services.

Bob had some fairly strong opinions on the lack of reliable coverage from the major providers of cellular telephone service in the area. Different city departments are using services from AT&T Wireless, Sprint, Cingular, Verizon and Nextel at this time.

4.4.4. Redevelopment and Economic Development Department

Uptown interviewed Nancy Martin from the Corona Economic Development office. There are several development and redevelopment projects either already underway or planned in Corona. These projects are for both residential and commercial properties and include the Mansville project, The Crossings, Dos Lagos, McMillan and Westgate.

The new development projects offer the city their first opportunity to provide full utility services, including electric. Incorporating a bundled telecommunications offering into the plans is a natural first step for the city and another way to differentiate from surrounding areas in the attempt to attract more businesses to Corona.

4.4.5. Information Services Division

Uptown met with Steve Larson, Paul de Jonckheere, and Randy Boehm from the Corona Information Services Division. The group summed up their collective needs quite clearly: High-speed connectivity to all remote sites. This includes GigE for data traffic and VOIP for voice to connect the fire stations, water treatment plants, police department sites, senior centers, libraries, the city's corporate yard, etc.

The city is currently using combinations of four T1's and 18 ISDN lines internally with a fractional DS3 from PacBell for external connectivity to the Internet. There is a 15-year-old Diffinity PBX that the city intends to replace when the new city hall is completed.

This meeting identified the clear need for a unification of the various telecommunications systems within the city. A later section of this report on the Metro Area Network (MAN) options for Corona will address this issue.

4.4.6. Police Department

Uptown interviewed Ray Cota from the Corona Police Department. The city currently maintains 50 police units and two administrative locations. His department's main concerns lie in the wireless connections of his officers and their vehicles. The department has tried a number of different cellular telephone service providers and is currently using service from Verizon with the intention of moving to a CDPD based solution. CDPD is also the provider of the system that connects the laptops in each patrol car. There are some specific, geographical coverage problems with the existing service.

The department's main need is for additional bandwidth to support video and graphic applications such as picture and data uploads to the station, remote video security systems, and various videoconferencing needs.

4.5. Institutional Interviews

Uptown was able to interview the local school district but three attempts to contact Corona Regional Medical Center to discuss their telecommunications services were unsuccessful.

4.5.1. Corona Norco Unified School District

Uptown interviewed Rosalie Aja, Director of Purchasing for the school district. They currently receive very large (60-70%) discounts on telecom services but Rosalie is willing to consider any alternative services providers that can save the school district some money.

They utilize PacBell for local phone service and MCI for long distance. She is generally satisfied with both providers and is not aware of any unmet needs as far as service levels or product options. The school district does have a cellular plan with Verizon and is also satisfied with the level of service they're receiving.

Meshworks provides T1 based Internet access to all 35+ schools and administrative locations in the area. Rosalie is very satisfied with them as a data service provider and relies on them quite heavily for the system management required to run a network of that size.

She was generally unsure on the likelihood of purchasing services offered by the city and cost is by far the biggest factor in their purchasing decision. Rosalie did mention that the school district is under contractual obligations to some of their service providers but she was unable to provide any specifics surrounding them.

5. Strengths, Weaknesses, Opportunities & Threats Analysis

Uptown used a Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis to evaluate the potential qualitative risks and benefits of a Corona telecommunications project. A SWOT analysis combined with a thorough assessment of the competitive landscape should help define the nature of the city's competitive advantage as a provider of telecommunications services in Corona. This section details the components of the SWOT analysis and the following section describes the competitive landscape.

5.1. SWOT Summary

Uptown has completed many assessments of this type for municipal clients that own their own electric utility. Corona differs from these clients in that their electric utility does not have transmission and distribution facilities deployed throughout the community. While the City has

access to many miles of waste water lines, which can be used to run fiber optic cable, most utilities run fiber cable aerially (on their pole infrastructure). Corona possesses other strengths, but the development of the electric utility operation will be critical factor in overcoming their inherent weaknesses. Opportunities for the city clearly outweigh threats. Corona should be concerned with technology obsolescence and cash flow issues, but the opportunity to improve the City's basic infrastructure and increase quality of life should provide enough incentive to consider moving forward with some type of telecommunications initiative.

5.2. Strengths

The city has strengths that it could leverage when offering telecommunications services. These strengths include an extensive transmission and distribution infrastructure, their position as dominant local service provider, the existing telecom infrastructure and expertise, and access to low cost capital.

5.2.1. Access to Rights of Way and Utility Infrastructure

As a public utility, the city has exclusive access to public rights of way and has used that to build a water and wastewater system to every home and business in the community. Future power utility facilities will also provide the city with another potential delivery mechanism for telecommunications service offerings.

5.2.2. Position as Dominant Local Service Provider

The city currently serves approximately 42,000 residential and commercial customers. In addition to customer lists and detailed spending data, the city also touches each customer with a monthly bill. Billing statements are an excellent way to communicate with customers about new services and initiatives.

5.2.3. Existing Telecom Infrastructure and Expertise

The city has already leveraged its existing infrastructure to construct a limited network throughout Corona. This network is comprised of limited fiber optics connecting the corporate yard, city hall, library and downtown location. There are also a number of qualified City employees with experience in fiber-based systems.

5.2.4. Access to Low Cost Capital

In the telecommunications industry, capital is king. A mediocre company with access to low cost capital will almost always win out over a superior company that is strapped for cash. Any type of facilities based telecommunications offering will require large amounts of capital. Getting low cost capital quickly allows providers to build-out before the competition and get that critical time to market advantage. If the city were to use bond proceeds (revenue or general obligation) to fund their telecommunications venture, it can be assumed that the interest rate for these bonds would be 5% or less. This cost of capital would not be attainable for any other provider of telecommunications wishing to offer services in Corona.

5.3. Weaknesses

The strengths of being a monopoly do not come without some associated weaknesses. This section outlines the key areas of weakness that will need to be addressed prior to moving forward with a telecommunications offering.

4.3.1. Telecommunications Skill Deficiencies

The operational issues associated with offering telephone and data services are similar to those of the energy business, but the technology is vastly different. For example, electric linemen are experts around transformers and electric meters, but have no expertise in configuring a data router or fine tuning analog video modulators. The learning curve can be steep depending on the caliber of personnel being trained.

4.3.2. Lack of Competitive Marketing Experience

Marketing and sales activities take center stage in a competitive market. Ad agencies need to be hired and given direction on a strategy, marketing campaigns need to be developed and promotions need to be executed flawlessly. If the city enters the cable, Internet and telephone markets, it will become the target of intense marketing and promotional campaigns aimed at taking customers back and impugning the city's ability to provide quality telecommunications services. The city must have expert marketing and sales personnel on staff that is qualified to counter such tactics with more powerful messages and campaigns.

4.3.3. Public Review of Strategy

In most businesses, telling your competition about your business plans would get you fired. Unfortunately, all any telecommunications provider needs to do to find out the city's plans for telephone, data, and video is attend a city council meeting. They are also given the opportunity to question the plan and lobby against any element. This poses a problem for the managers of any future telecommunications venture.

5.4. Opportunities

Opportunities abound for the City of Corona if they were to offer telecommunications services to the community. These opportunities include customer retention, providing for internal utility needs, improved quality of life, lower revenue requirements and assuring the best of telecommunications services is available.

5.4.1. Retain Customers

It has been proven that customers that buy more services from a given provider are less likely to switch to another provider for any individual service. The city can take advantage of this phenomenon by offering telephone, high-speed Internet and video services on top of existing utility services¹.

5.4.2. Offer a More Attractive Environment for Businesses

Increased choice in state of the art telecommunications services could help in attracting more large businesses to the Corona area. Information intensive employers typically favor locales that feature high-end telecommunications capabilities from multiple providers. A City owned telecommunications network would certainly make the area much more attractive to large employers.

5.4.3. Provide for Internal Utility Needs

If the city chooses to build a telecommunications infrastructure to provide retail services in Corona, the incremental cost of providing advanced demand management and meter reading

¹ Uptown recognizes that the current electric utility customer base is not large, but customer retention will become an issue as that base grows.

capabilities might be low. An advanced telecommunications system could also be used to turn service on and off, without requiring a truck roll. These capabilities would make the city more efficient and free up critical resources for other more important tasks. With the electric utility operation in its infancy, adding telecommunications facilities to each capital project will also allow the City to share costs between the two ventures.

5.4.4. Improved Quality of Life

The city has an opportunity to offer a unique blend of services that match the lifestyle of the community. For example, the city could offer a special low cost, child friendly Internet service or a special sports fan cable package. Many municipal utilities have actually asked potential subscribers to help create the best channel line-ups and cable packages. This kind of effort sends a clear message – “This is your cable system, so help us design it.” AT&T Broadband could never dream of taking such a step.

5.4.5. Lower Revenue Requirement

Depending on the strategy chosen and its economics, the city may be able to fund city operations with proceeds from a telecommunications venture. These funds would offset taxpayer contribution requirements and give the city an opportunity to either lower taxes or invest in other elements of the community.

5.4.6. Assuring Best Telecommunications Services Available

The city has the opportunity to complement existing service providers with the latest in telecommunications services. If Corona is low on the priority list for Pacific Bell or AT&T Broadband to deploy the latest telecommunications capability, the city could deploy the same technology (or better) on their own network. It is assumed that the city will build a network that is capable of providing services that are technically superior to anything offered by either Pacific Bell or AT&T Broadband.

5.5. Threats

Two primary threats exist for any utility that builds a full service network and offers cable, telephone and high-speed Internet services. Technology obsolescence and cash flow problems are discussed next.

5.5.1. Technology Obsolescence

Technology obsolescence should be an ongoing concern for all telecommunications service providers. If the city chooses to build a full service network, the capital requirements will be enormous. The goal would be to build a reliable state of the art system that will be competitive with other networks. The city will need to select the best technology at the time of deployment. However, telecommunications systems evolve very rapidly and there is always the risk that a better system will be developed in the future. On the other hand, if the city takes a chance on an untested architecture with great promise, there is the chance that the system will fail to meet expectations. There is no clear-cut remedy for this ever-present dilemma.

5.5.2. Cash Flow Problems

Another threat to the city is the potential magnitude of unexpected negative cash flow. Any venture of this scale will run into a few unforeseen problems and complications. These types of problems are typically remedied with more resources – principally cash. Unplanned draws of cash may have an adverse impact on the city's ability to fund other operations.

6. Industry Analysis

Uptown researched the primary providers of Internet, cellular telephone, cable television and telephone services in the Corona market. As with most suburban areas in California, Uptown found no major competitive alternatives to the incumbent providers PacBell and AT&T Broadband for telephone and cable television services. PacBell is currently offering all of the latest telephone and Internet access services possible in Corona. This includes advanced calling features like Calling Name ID and Talking Call Waiting ID. DSL is available in parts of Corona via a single Central Office (CO) located at 3rd and Joy St. AT&T Broadband owns the cable network that can deliver close to 210 channels and they've deployed their version of high-speed Internet access in parts of the city. There are no significant Competitive Local Exchange Carriers (CLECs) operating their own networks to compete with PacBell at the residential level. Nor is there any cable over builder competing with AT&T Broadband. Following are summaries for the main competitors, and their products, in the Corona area.

6.1. Local Telephone Service Providers

Long distance telephone service has been competitive for over fifteen years in the U.S. The process to make local telephone service competitive is much more complex and has taken longer to implement. And even with local competition in full swing, only businesses are being targeted. Pacific Bell's monopoly status has been slowly erased over the past several years by federal and state regulators. This has spawned the creation of so called Competitive Local Exchange Carriers (CLECs). Many of these national and regional CLECs haven't been able to weather the recent telecom market downturn. Those that do survive, or re-emerge relatively intact from bankruptcy, will continue to pose a competitive threat in a marketplace with fewer providers.

The main competitive territory that remains untouched is the traditional residential market. Residential rates being offered by incumbents are typically much lower than business rates. Sometimes referred to as cross subsidization, business rates were kept high by the regulators to keep basic telephone (lifeline) services affordable for the average citizen. Voice and data CLECs have only targeted multiple dwelling units (MDUs) for residential services due to the high densities offered by those types of structures. Only those operators with some form of facility to the home will be looking to offer local residential telephone services. For the purposes of the Corona study these operators are Pacific Bell and AT&T Broadband.

6.1.1. Pacific Bell

Pacific Bell offers a full range of telephone services to homes and businesses. Basic telephone service includes a free local calling area and access to any long distance provider of the customer's choosing. In addition to basic service, Pacific Bell also offers a number of custom calling and enhanced services. These include voice messaging, call waiting, long distance call waiting, calling name delivery (Caller ID), call waiting with caller ID, continuous redial, selective call rejection, selective call acceptance, last number recall and many more.

The services listed in this section are directly related to the services that Corona could offer residential and small business customers. Pacific Bell local telephone services are listed below.

Table 23 - Pacific Bell Residential Telephone Service Offerings

Service	Description	Pricing
Flat Rate Phone Service	Local dial tone with unlimited local calling.	\$10.69 monthly \$33.01 installation
Additional Phone Line	Local dial tone with unlimited local calling.	\$10.69 monthly \$33.01 installation
Measured Rate Service	Local dial tone with unlimited incoming calling and per minute charges for outgoing calls.	\$5.70 monthly \$33.01 installation
The Message Center	Answering machine without the machine. Remote retrieval of messages. Answers calls when on the phone. Compatible with call waiting. Deluxe service adds time to greeting length and message retention.	Standard \$7.95 monthly \$19.95 installation Deluxe \$10.95 monthly \$19.95 installation
One Price Saver	1,000 minutes of local toll calling.	\$24.95 monthly \$0.05 per minute after 1,000 minutes
Price Saver 60	60 minutes of local toll calling.	\$4.20 monthly \$0.07 per minute after 60 minutes.
Saver Plus	180 minutes of local toll calling.	\$11.70 monthly \$0.06 per minute after 180 minutes
Call Waiting	Alerts callers of incoming call when on the phone.	\$3.23 monthly \$4.75 installation
Caller ID	Displays name and number (when available) of incoming caller.	\$6.17 monthly \$4.75 installation
Call Waiting ID with Name	Displays name of incoming caller when already on the phone.	\$3.23 monthly \$4.75 installation
Three-Way Calling	Ability to add two parties to a telephone call.	\$3.23 monthly \$4.75 installation
Call Forwarding	Sends incoming calls to another number.	\$3.23 monthly \$4.75 installation

Table 23 - Pacific Bell Residential Telephone Service Offerings (continued)

Service	Description	Pricing
*69 Call Return	Gives the number date and time of the last incoming call.	\$3.23 monthly \$4.75 installation
WirePro	Inside wire and jack maintenance package.	\$2.99 monthly
The Economy Plan	Caller ID and four additional custom calling services (see list in The Works)	\$14.95 monthly \$4.75 installation
The Economy Plan Plus	Caller ID, Message Center and four additional custom calling services (see list in The Works).	\$22.90 monthly \$24.70 installation
The Advantage Plan	Caller ID, Privacy Manager and 5 additional custom calling services (see list in The Works).	
The Works	Caller ID with all of the following custom calling services: Call Return, Call Forwarding, Select Call Forwarding, Call Screen, Priority Ringing, Repeat Dialing, Three-Way Calling, Speed Calling 8, Call Waiting and Call Waiting ID.	\$19.95 monthly \$4.75 installation
The Works Plus	The Works package plus Message Center.	\$27.90 monthly \$4.75 monthly
Phone Solution	Local Phone Line, The Works, WirePro, Saver 60 and Message Center.	\$39.95 monthly \$24.70 installation
2-Line Phone Solution	Phone Solution package plus additional local phone line.	\$60.95 monthly \$57.71 installation
Phone-Protect	Covers problems with subscriber telephones. Repair and replacement up to \$400 annually.	\$3.99 monthly Discounted 20% w/WirePro coverage
SBC Web Solution	Phone Solution package plus additional phone line and Prodigy dial-up Internet access.	\$64.95 monthly \$57.71 installation
DSL Web Solution	Phone Solution Package plus DSL Internet Service.	\$89.90 monthly \$24.70 installation
CCS Power Pack	Caller ID plus 5 – 9 Custom Calling Features on a single business line.	10% discount on selected calling features

Table 23 - Pacific Bell Residential Telephone Service Offerings (continued)

Service	Description	Pricing
Integrated Business Solutions	Provides package pricing for customers with 10-25 Centrex lines when ordering dedicated Internet access service using Frame Relay (384 Kbps) or Enhanced DSL ² (6.0 Mbps/384 Kbps) services.	Pricing varies according to combination of services selected.
Power Office DSL Internet Access Package	The package comes complete with lines, timesaving Custom Calling features, a Service Area Toll Usage Plan, and DSL* Internet service with Shared Web Hosting so you can have a presence on the Internet.	Pricing varies according to combination of services selected.
The Works	Purchase Caller ID and any ten or more features on a single business line.	\$20.00 off, per month. \$5.70 Installation

6.1.2. AT&T Broadband

AT&T Broadband offers local and long distance phone service, called AT&T Digital Phone, over the standard cable television network. This service is not currently available in the Corona area and it is generally believed that major plant upgrades will be severely limited pending AT&T Broadband's merger with Comcast. Product and pricing information for AT&T Digital Phone is listed below as a reference only at this point.

Table 24 - AT&T Broadband Telephone Service Offerings

Service	Description	Pricing
Local Service	Local access line with unlimited calling in the local calling area.	\$10.00 Monthly \$30.00 Installation
Additional Line	Second local line with unlimited calling in the local calling area.	\$6.00 Monthly
Block of Time Offers	Minutes of long distance minutes sold in conjunction with local service. Local toll is charged on a per minute basis.	\$10.95 for 180 \$15.95 for 300 \$28.95 for 600 \$46.95 for 1000
Long Distance Options	Those customers that wish to purchase long distance service from AT&T, but not through a Block of Time can get a flat per minute rate or a monthly rate combined with a reduced per minute rate.	Flat Rate / Minute \$0.12 per minute Monthly Charge \$2.95 Monthly \$0.05 per minute

² Service subject to availability.

6.2. Dial-Up Internet Access Service Providers

Thousands of Internet Service Providers (ISPs) offer service across the U.S. The majority of these ISPs are resellers that use an existing modem bank installed by a much larger local ISP. They will typically pay between \$8.50 and \$11.50 per subscriber utilizing the large ISPs modem banks. This is an inexpensive way for smaller ISPs to widen their presence from local to regional and regional to national. Corona should be aware of these resellers and their activities, but they are not a major competitive threat. The only exception to that rule would be America Online. The bulk of the ISP competitive discussion below is devoted to in-place and future ISPs in the Corona area.

6.2.1. America Online

America Online (AOL) is the dominant ISP in the U.S. As of April 2002 AOL had 26.1M subscribers in the U.S. This gives them 17.5% of the Internet access market share. AOL has divested its interest in local dial-up networks and focused all corporate efforts on acquiring subscribers. They rely on the local network operators for access, usually via dial-up connections. With the purchase of Time Warner, AOL now has a built-in source for cable modem access to millions of subscribers. They have also negotiated several access arrangements with DSL service providers. AOL offers unlimited dial-up access for \$21.95 per month and unlimited access using a third party ISP for \$9.95 per month.

6.2.2. MSN

MSN (Microsoft Network) was launched by Microsoft to compete against AOL. This primarily dial-up service has grown quickly having captured 5.2% market share in this very competitive industry. Aggressive marketing partnerships with retail outlets and local telephone companies like Qwest and Verizon have been very successful to date. In fact, MSN has passed Earthlink in total subscribers to be the second largest ISP in the U.S. Microsoft owns a small piece of Comcast Cable, but is working to expand its access to broadband services like DSL from other providers. MSN service packages vary, but are typically priced at \$21.95 per month for unlimited Internet access.

6.2.3. United Online

Formed by the partnership of NetZero and Juno, both former free ISPs, United Online stands as the market's premier 'no frills' Internet access provider. They rank 3rd in overall market share with 3.5% and have 5.2M subscribers. Earthlink is running a close 4th at this point with 4.9M subscribers. United Online advertises heavily as the low cost provider and offers dial-up access for \$9.95/mo with a free service that limits users to 10 hours per month.

6.3. Broadband Internet Service Providers

Broadband Internet access is defined as a service level above 128 kbps and can essentially, for the residential market, be limited to access via DSL or cable modem. There are alternatives for broadband access with wireless or satellite providers, but these products are either unproven technologically or financially for a broad customer base. These technologies are discussed, but are not currently considered a strong competitive threat.

6.3.1. Pacific Bell

Pacific Bell's flagship Internet access service for residential, home office and small businesses is called Digital Subscriber Line (DSL). DSL runs over the existing phone line from Pacific Bell into the home or office. The data signal is split from the voice signal using special equipment and sent to the computer. Speeds range from 128kbps up to 1.5Mbps with monthly pricing from

\$49.95 to \$179.95. DSL is Pacific Bell's answer to two compelling problems. First, DSL does not tie up any switching facilities like dial-up Internet connections do. Second, Pacific Bell needed a high-speed solution to compete with the onslaught of cable modems being offered by major cable operators. Pricing is listed below.

Table 25 – Pacific Bell Internet Service Offerings

Service	Description	Price
SBC Yahoo Dial-Up Internet Access Service	Standard unlimited plan with email and limited hosting.	\$21.95 Monthly First month free (up to 700 hours)
Basic DSL Up to 1500	DSL service with data throughput of 1.5Mbps Downstream / 128kbps Upstream. One dynamic IP address, unlimited usage, Internet access, email and web hosting.	Residential or Business \$49.95 Monthly \$99.00 Modem \$50.00 activation \$200.00 Professional Installation
Enhanced DSL Up to 1500	DSL service with data throughput of 1.5Mbps Downstream / 128kbps Upstream. Five static IP addresses, unlimited usage, Internet access, email and web hosting. Commercial service only.	Residential or Business \$64.95 Monthly \$99.00 Modem (or) \$378.00 Router \$50.00 activation \$250.00 Professional Installation
Enhanced DSL Up to 1500 w/Router	DSL service with data throughput of 1.5Mbps Downstream / 128kbps Upstream. Router, five static IP addresses, unlimited usage, Internet access, email and web hosting. Requires 18-month contract term.	Business Only \$74.95 Monthly \$50.00 activation \$250.00 Professional Installation
Enhanced DSL Up to 6000	DSL service with data throughput of 6.0Mbps Downstream / 384kbps Upstream. Five static IP addresses, unlimited usage, Internet access, email and web hosting.	Business Only \$179.95 Monthly \$99.00 Modem (or) \$378.00 Router \$50.00 activation \$250.00 Professional Installation
Enhanced DSL Up to 6000 w/Router Promotion	DSL service with data throughput of 6.0Mbps Downstream / 384kbps Upstream. Router, five static IP addresses, unlimited usage, Internet access, email and web hosting. Free dial-up service also provided. Requires 18-month contract term.	Business Only \$74.95 Monthly for first 90 days \$159.95 Monthly thereafter \$50.00 activation \$250.00 Professional Installation

6.3.2. AT&T Broadband

AT&T Broadband currently offers high-speed Internet access services using cable modem technology. They used to offer their service under the @Home (Excite @ Home Corporation) brand. @Home was created to serve as a national provider of network services and content for AT&T Broadband (formerly TCI), Comcast and Cox cable companies. Relations with their cable partners deteriorated and @Home finally turned off service to all AT&T Broadband subscribers on December 1, 2001. The company no longer exists.

Nearly 1M subscribers were left with no Internet connectivity while AT&T Broadband implemented their re-branding and restoration plan. AT&T Broadband has converted all former @Home subscribers over to their Broadband Internet (BI) service but lost many subscribers to DSL during the less than smooth transition. AT&T Broadband Internet is available in some areas of Corona but the number of current subscribers in the area is unknown. Pricing is listed below.

Table 26 – AT&T Broadband Internet Service Offerings

Service	Description	Price
AT&T BI Service	Always-on high-speed Internet access service provided through the existing cable line into the home. Speeds can exceed 6Mbps, but average data rates are typically less than 768kbps.	\$39.95 monthly after two free months
Cable Modem Lease	Fee charged for the lease of a cable modem. Subscribers may use their own modem that can be purchased at a local retailer for around \$200.	\$10.00 monthly
AT&T BI Installation	AT&T Broadband installer connects the cable modem. Subscriber is responsible for loading all required software.	\$49.95
AT&T BI Premium Installation	AT&T Broadband installer connects cable modem and installs all software required.	\$99.95

6.4. Satellite Data Service Providers

Millions of consumers have switched from cable television to satellite service providers like Dish Network and DirecTV. The next step for satellite technology is to provide high-speed Internet access services. Several ventures around the world are busy developing multi-billion dollar satellite constellations that promise multi-megabit capabilities to millions of users worldwide. These ventures are primarily focused on large multi-national corporations and Internet service providers and are not expected to be operational for at least two more years. For the purposes of this assessment, the current offerings of satellite Internet service from DirecTV and Dish Network are outlined.

6.4.1. DirecWay

DirecTV was the first satellite provider to introduce a satellite based Internet access service – DirecPC (now called DirecWay). The original DirecWay service sent Internet downloads to the subscriber via satellite and subscribers were required to use a dial-up connection to send information back the Internet. This limitation was due to the high cost of subscriber based satellite uplinks, but these costs have since come down enough for DirecWay to offer two-way

services over their own network so a phone line is no longer required. One-way service is still provided for less demanding subscribers.

DirecTV has recently introduced a totally terrestrial Internet access service that uses local telephone company DSL facilities. This new service is called DirecTV DSL. DirecTV's parent company, Hughes Electronics, purchased the DSL ISP Telocity in April 2001 and is simply reselling DSL services from local telephone providers. Pricing for DirecTV DSL is also listed.

Table 27 – DirecWay Internet Service Offerings

Service	Description	Price
DirecWay from DirecTV	Two-way high speed Internet access with a one-year contract commitment.	Special Offer \$99.00 Monthly \$99.00 Up front Standard Offer \$59.99 Monthly \$579.98 Up Front
Earthlink Satellite Powered by DirecWay	Two-way high speed Internet access with a one-year contract commitment. Includes 20 hours of dial-up access from Earthlink.	\$69.95 Monthly \$399.00 Hardware \$199.00 Installation
AOL Plus Powered by DirecWay	Special version of AOL provided over the one-way (requires telephone line for dial-up return) DirecPC service. Geared towards a TV audience with rich multimedia content related to entertainment, news and sports.	\$31.05 Monthly (AOL fees extra) \$149.00 Hardware
Pegasus Express Powered by DirecWay	Two-way satellite based Internet access service. No phone line required. Always on connection. Speeds not specified by provider. Unlimited access for a flat monthly fee. Professional installation required.	\$69.95 Monthly \$499.00 Hardware \$199.00 Installation
Standard DirecTV DSL	DSL service offered under the DirecTV brand. Month to month service with no annual contract required.	\$49.99 Monthly \$49.99 Activation fee
Special DirecTV DSL Offer	Standard DirecTV DSL service with a one-year contract requirement.	\$24.99 Monthly for first 3 months \$49.99 monthly afterwards

6.4.2. StarBand

Until April 2002, StarBand had a direct relationship with EchoStar to provide a two-way satellite based Internet access system. Before StarBand, Dish did not have an Internet access service. In April, in a move thought by many as a tactic to further EchoStar's takeover attempt of Hughes Electronics, EchoStar stopped accepting new customers for the service. StarBand, as a separate entity, is able to sell its services and equipment directly to dealers and existing customers were not affected by this transition.

StarBand is delivered to customer locations via a larger dish than the typical Dish Network antenna. This new dish is 24"x36" compared to a standard 18" dish for DirecTV and Dish Network. A larger dish is required to generate enough power for the return path (uplink) to the satellite. Dish Network video services can also be received over the new StarBand dish. Download speeds are limited to 500kbps and upload speeds are limited to 150kbps. Customers must purchase a StarBand receiver and modem for \$499. Monthly service runs \$69.99 for unlimited usage. StarBand requires a one-year contract for all services.

6.5. Video Entertainment Service Providers

The video entertainment industry has become crowded with multiple service providers vying for their share of each consumer's entertainment budget. The cable television monopoly was broken several years ago with the introduction of bold over-builders and then by satellite providers. AT&T Broadband, DirecTV and Dish Network are discussed next.

6.5.1. AT&T Broadband

Cable operators learned a hard lesson when satellite video providers like Dish Network and DirecTV started luring subscribers away with huge channel line-ups and elaborate on-screen guides. In response to the competitive threat, most cable operators have launched digital channel line-ups. Digitizing allows cable operators to compress up to 14 digital video channels on a standard 6 MHz analog video channel. The end result is the ability to offer hundreds of digital video channels over and above the standard analog channel selection.

AT&T Broadband is the only provider of cable television services in Corona. They currently offer a 70 channel (26 with Basic, 70 with Expanded Basic) analog line up. Analog channels can be viewed on any cable-ready television, without the need for a set top box. Subscribers must use a set top box from AT&T Broadband to view premium channels, pay per view titles and digital programming (including digital music). Nationally, AT&T Broadband's digital tier includes 52 special interest channels, 45 channels of digital music and 29 channels of premium programming including movie channels and pay per view. A complete list of AT&T Broadband packages is provided in Table 28.

Table 28 – AT&T Broadband Cable Television Offerings

Service	Description	Price
AT&T Cable	Local channels, basic service and expanded basic channels like ESPN, CNN, Lifetime, Nickelodeon, The Weather Channel, USA Network, TBS, TNT, American Movie Classics, among others.	\$38.40 monthly Free installation
Digital Cable Bronze	AT&T Cable, Digital Set Top Box and remote, Encore movie channel multiplex, 19 additional special interest channels and digital music.	\$41.99 monthly
Digital Programming Packages (Silver, Gold and Platinum)	Four packages offer various combinations of premium channels, sports, music, variety and family programming. Pricing is in addition to Digital Cable Bronze charges.	\$12.00 - \$40.00 additional per month

6.5.2. Dish Network

Owned by Denver based Echostar, Dish Network (Dish) is a high power direct broadcast satellite (DBS) video entertainment service that is available throughout the U.S. The power of the satellite transmission allows Dish to be delivered over very small (18") satellite dishes. Dish provides local broadcast channels for 34 major U.S. markets. They currently own five operational satellites in geo-stationary orbit around the earth. With the launch of EchoStar V, they now have the capacity to deliver 500 channels of digital video, data and audio channels over a single 18" satellite dish.

Dish uses multiple satellites to deliver over 200 channels of video and CD quality sound entertainment. Dish offers several different programming packages that range from \$19.99 to \$69.99 per month and they've become very aggressive in their latest marketing and promotion efforts. For example, new subscribers are enticed by offers of free equipment for up to four televisions when signing up for 12-month contracts.

6.5.3. DirecTV

DirecTV is the leading DBS entertainment provider in the U.S. The service launched in 1994 and now claims over ten million subscribers. Subscribers are required to purchase their dish systems from any number of retail or online distributors. Systems are typically sold for around \$149 - \$199. DirecTV offers the same general service line-up as Dish with one notable exception - the NFL. DirecTV has the exclusive DBS distribution rights to all NFL games. DirecTV's "Sunday Ticket" is very popular with sports fans during the fall and winter months. DirecTV also offers local channels for 38 major U.S. markets. They do not plan on adding any additional cities to the local broadcast line up due to limitations in their satellite infrastructure. DirecTV offers two basic tier-programming options and many premium channel packages. Pricing ranges from \$31.99 to \$82.99 per month.

DirecTV is one of the five units of Hughes Electronics Corporation, which is a wholly owned subsidiary of General Motors. In December 2001, Echostar offered a \$26.3B proposal to buy Hughes, which also runs DirecTV Latin America, Hughes Network Systems, PanAmSat and DirecTV DSL. The purchase is currently under review and a final decision isn't expected until at least the summer of 2003. The combined company would create a single provider of DBS services in the US with approximately 17M subscribers.

6.6. Cellular Telephone Service Providers

A few large providers dominate the national cellular phone market. As cellular coverage becomes more ubiquitous, the difference between providers becomes more and more defined by price and service packages. The overall market will continue to be fragmented due to the lack of universal standards. The opportunity of the 3G ("third generation wireless") standard is discussed later in this report. All major providers combine the necessary equipment (phones, chargers and accessories) and selected calling features (voice messaging, call waiting, caller ID, etc.) in their packages but inclusion and pricing does vary. There is an increasing focus on wireless data applications throughout the industry and the eventual marriage of wireless voice and data is viewed as the next 'killer app' in the telecommunications marketplace.

This section covers services offered by the top 3 wireless providers - AT&T Wireless, Verizon, and Cingular. Cellular coverage is impossible to quantify in any comparable way so anecdotal feedback from local users and vendors is the only way to measure performance in the Corona area. Based on initial findings, AT&T Wireless and Verizon appear to be the most reliable service providers in the Corona area.

6.6.1. AT&T Wireless

AT&T Wireless spun off its wireless services group in 2001 and is currently the 3rd largest wireless provider in the US behind Verizon and Cingular. Their 'mLife' promotions, the 'm' stands for mobile, offer a number of calling plans and packages. As with other major providers, there seems to be an endless number of promotions that include deals on equipment, activation and monthly calling plans. Consumer packages start at \$20/mo while small business packages begin at \$35/mo.

6.6.2. Verizon

Verizon Wireless is the leading provider of wireless services in the US with almost 29 million subscribers and was founded as a joint venture by Verizon Communications and Britain's Vodafone Group. Since launching a new pricing plan in February of this year, Verizon has seen dramatic quarterly increases in new subscribers. The wireless industry in general has a large churn rate and efforts towards customer retention, in addition to pure acquisition, led to these increases in net customers.

6.6.3. Cingular

Formed as a joint venture between the domestic wireless divisions of SBC and BellSouth, Cingular is currently the second leading provider with 22 million subscribers and network that covers over 200 million people in the United States. Their positioning as a company that 'is dedicated to self expression and customer-friendly service' is pervasive throughout their marketing. Consumer and commercial packages start at \$30/mo for 250 minutes with no long distance and roaming charges. Cingular's key advantage lies in their positioning as the 'neighborhood' provider with an un-affiliated brand that has the resources available from their venture partners SBC and BellSouth.

6.7. High Capacity Transport Providers

High capacity transport providers offer fiber-based data services for larger businesses. These dedicated services differ from broadband data services like DSL, cable modem or fixed wireless in that they are fully secure, managed services. Examples are T1, DS-3 or OC-3 lines.

The market for these services has taken a major hit in the last two years with large providers like Qwest, Global Crossing, Level 3 and WorldCom all suffering well publicized financial and operational struggles. This, combined with the equally public fall out of several DSL and wireless providers, had greatly reduced the number of options available to businesses. This combination of events has driven many businesses to the most reliable provider available; usually the incumbent phone company, or PacBell in this case.

6.7.1. PacBell

As the incumbent provider in the area, PacBell is best positioned to offer high capacity data services in Corona. They offer a suite of products for small and large businesses ranging from dial-up and DSL access to DS1, DS3 and GigE MAN connections.

DSL service includes Dynamic IP Addresses, multiple POP Email accounts, and personal web space (restricted for commercial use), and UseNet Newsgroups. An optional, commercial Web hosting account is available at discounted rates.

T1 and T3 pricing are difficult to obtain without a specific address since these services are priced on a per-mile basis. However, generally speaking a PacBell T1 with dedicated Internet access in

Corona will be around \$1,200 per month and a T3 about \$6,000 per month. These prices assume a three-year contract.

Frame relay service is available at speeds approaching a T1. This service is not distance based, so accurate pricing is available. 1.534 Mbps Frame Relay Internet service in Corona is \$940.00 per month on a three-year contract. Competitive pricing will be similar.

6.7.2. Qwest

Qwest is a full service carrier, offering competitive residential and business services in Southern California. However, the short-term stability of the company is in question. A long-term partnership with Qwest should be avoided until the company is financially stable and has addressed their legal and ethical issues.

6.7.3. Broadwing

Broadwing Inc. is a full service carrier, offering residential and business service. This may be the best choice for an alternative, full service telecommunications provider to serve Corona. They currently provide Internet, voice, and private line service in the Los Angeles area. Broadwing is headquartered in Cincinnati, OH and operates Cincinnati Bell, an incumbent local exchange carrier, providing service to Ohio, Kentucky, and Indiana, and operates a national, fiber optic, IP network.

6.7.4. Time Warner Telecom

Time Warner Telecom, purchased the assets of GST in 2000 and currently operates a West Coast fiber optic network from Phoenix, through San Diego, up to Seattle Washington. They do not provide residential service and have only recently opened the doors to small business service. Their target market remains Fortune 500 corporations.

6.8. Future Entrants / Technologies

Wireless technologies will play a major role in the way people communicate now and into the future. Several alternatives that are not yet in play in Corona bear mentioning as potential future entrants in the area and are outlined below.

6.8.1. AT&T Broadband Telephony Service

As discussed earlier in this section, AT&T Broadband has upgraded their plant in Corona to support a telephony product offering. Local AT&T Broadband staff has promised to make this service available but has not set a launch date. Based on the pending merger with Comcast it is difficult to predict when the focus and resources necessary to execute this product line will be made available. AT&T Broadband has success with this service, and the associated product bundles of voice, video and data, in other markets and its potential impact on services offered by the city should not be overlooked.

6.8.2. Broadband Satellite

Much has been made of the crop of broadband satellite development ventures that seek a share of cable modem and DSL market. Companies like Teledesic and Astrolink are feverishly working on high capacity Internet satellite platforms that they expect will serve the high-speed needs of consumers and businesses. Plans call for constellations of 60+ satellites orbiting the Earth and communicating with millions of subscribers via small roof mounted dishes. Capacity per subscriber is expected to be over 1.5Mbps at the time of launch in three to five years. There are a few broadband satellite providers that have launched service for the ISP and commercial markets,

but a truly affordable high-speed consumer service (Teledesic and Astrolink) will take longer to develop.

Analysts predict that the broadband satellite market may be strong for underdeveloped countries, but that the U.S. will have already been served with DSL and cable modem services by the time these networks are operational. Besides time to market problems, satellite signals will not be capable of penetrating building structures, thus the need for a roof-mounted dish. Finally, broadband satellite operators have given up on mobility, which takes away one of the greatest intrinsic benefits of any wireless Internet solution.

6.8.3. 3G Wireless

Cellular telephone networks have been deployed ubiquitously across the U.S. Voice technology for wireless networks is now mature and the industry has turned its attention towards Internet services. With over 250 million cellular handsets in use throughout the world, equipment suppliers and standards groups are working hard to develop and introduce standardized high-speed Internet services that operate on cell phones and other hand held devices. Low-speed offerings are currently available that offer maximum bandwidths of 9.6 – 19.2 Kbps. Higher speed solutions will be deployed over the next several years in phases or “generations.”

The ultimate high-speed Internet access solution for cellular telephone providers is called 3G or Third Generation Wireless. 3G wireless capabilities hold the promise of delivering speeds of 144kbps at high speeds (in vehicle on the move), 384kbps at pedestrian speeds and 2Mbps for fixed stations. Consumers are becoming more and more mobile every year as evidenced by the nonstop adoption of cell phones around the world. This dramatic mobility trend has intersected with the Internet economy and the market for high-speed mobile Internet services is expected to experience explosive growth over the next ten years. In fact, wireless operators expect that data service revenue will eventually be larger voice service revenue.

6.9. Competitive Summary

Corona is situated in what can be called a fringe area – geographically close to a major metropolitan area but not close enough to receive the direct benefits associated with the larger market. There are reasonable choices available to the residents of Corona for high-speed Internet access, video programming and cellular telephone services. However, there may be an opportunity for the city to adopt localized offerings to appeal to the population's sense of community as a way to compete with the national incumbent providers that are typical in an environment like Corona.

Generally, the city is well served with voice, video and data services from AT&T Broadband and PacBell. That combined with the high satisfaction rates for residential and commercial services quantified in the primary market research effectively removes the time-to-market advantage. This has traditionally been a key motivator for telecommunications overbuilders, like municipalities, in the past.

7. Gap Analysis

The primary purpose of this market assessment was to understand the telecommunications needs of the key Corona communities of interest, compare those needs to the available services and capabilities in the market and then to identify any gaps between the two. Once the gaps are understood, strategy alternatives can be developed and recommendations can be made for moving

forward. This section outlines the gaps that Uptown has identified after analyzing the findings of the needs assessment and industry analysis phases.

7.1. Gap Analysis Summary

Uptown has identified 6 primary gaps between market needs and current telecommunications capabilities in Corona.

7.2. Limited Competition in Consumer and Small Business Markets

There are no significant competitors to AT&T Broadband and PacBell for retail services in the Corona market. Research shows that the majority of Corona residents and businesses are satisfied with their current provider, but there was also a high percentage of respondents that said cost was the most influential aspect when choosing a provider. Competitive city offered services have a good chance to be successful in an area where the incumbents are not used to having active competition.

7.3. No Viable Competitors to PacBell for High Capacity Fiber Services

CLECs operating in Corona do not seem to be very active in selling their services to medium and large businesses. So, medium to large business customers are left with very few alternatives to Pacific Bell for fiber based services. Although this does not appear to be an issue with them at this time, it may become more critical as telecommunications requirements grow.

7.4. No Major Telecommunications Hub in Corona

The closest major telecommunications hub to Corona is in downtown LA. Any major carrier in or near Corona is required to connect to that or a similar location in order to deliver services. Although this does not appear to be a major concern at this point, there may be additional capacity requirements as Corona and the surrounding area continues to grow.

7.5. City Department Bandwidth Requirements are Outstripping Resources

Interviews with several city departments revealed a current shortage of available bandwidth. The fire and police departments, specifically, stated the need. These interviews also communicated the variety of different internal networks and connectivity methods currently in use throughout the city.

7.6. Limited City Owned Fiber Capacity for Internal Departments

Corona currently has a limited fiber network in the city that connects a handful of internal locations. This network is not suitable for mission critical or emergency data. There is also little extra capacity on this network to accommodate additional internal or external services.

7.7. Spotty Cellular Phone Coverage

Many businesses and city departments complained about the lack of adequate coverage from the wireless phone service providers in Corona. Uptown was informed that the Corona City Council has taken steps to improve coverage by contacting the providers directly but no noticeable improvements have been made at this time. A number of city departments have changed providers multiple times in the last few years in an attempt to find the best solution.

8. Analysis of City Assets

All municipalities own assets that can be put to use in a telecommunications initiative. This is especially true for those that operate their own utility. These assets can be put to use in the municipality's own retail or wholesale telecommunications effort or made available to third parties to build their own local network. This section discusses the City's core assets, how they might be used and the related advantages and disadvantages of each application.

8.1. Assets

Corona has five core assets that could be leveraged to offer telecommunications services. These include strong brand recognition, a comprehensive distribution infrastructure, its position as a dominant local service provider, City rights of way, and access to low cost capital.

The City of Corona and its underlying service departments have had several decades to build a top-notch brand image in the minds of consumers and businesses. Citizens typically view their municipality with high regard and consider themselves to be tax paying "owners" of the community. Well-run cities tend to generate a great deal of local pride and sense of belonging that no private enterprise could ever produce.

As a municipality, the city has exclusive access to public rights of way that can be very valuable to wireless and wireline service providers. The city currently serves approximately 43,000 residential and commercial customers. In addition to customer lists and detailed spending data, Corona also touches each customer with a bi-monthly bill. Billing statements are an excellent way to communicate with customers about new services and initiatives. The city also maintains a large customer service personnel and back office systems infrastructure. These resources are highly skilled and provide first class service to customers. The various forms of city owned rights of way are also very valuable assets.

In the telecommunications industry capital is king. With the City's ability to draw on reserves and raise low cost bond funds, they could hold a distinct competitive advantage over many other providers. A mediocre company with access to low cost capital will almost always win out over a superior company that is strapped for cash. Any type of facilities based telecommunications offering will require large amounts of capital. Getting low cost capital quickly allows providers to build-out before the competition and get that critical time to market advantage.

8.2. Applying Assets

Corona's aforementioned assets are best leveraged by a telecommunications service provider planning to offer some form of cable television, local telephone or Internet access service. The City could either choose to offer these services on their own or lease a subset of the assets to a third party that wants to offer their own services. Municipalities across the U.S. have chosen both routes and each has its own set of advantages and disadvantages that the City should consider.

Most municipalities that choose to enter the telecommunications business do so on their own. From a simple resale approach to building a full service network capable of delivering video, voice and Internet services, the primary advantages of going it alone are control, increased profitability and brand enhancement. A quality image can be tarnished quickly if left in the wrong hands. Corona is best served by retaining control of any service that bears its name. If Corona were to offer services without a third party partner, the City would be taking on more risk and would be in line for more reward if the project is a success. Finally, providers that offer multiple services under the same brand name have been proven to be more successful in building

a stronger brand and retaining customers. The same would be true if the city expanded its service portfolio to add video, voice or data.

There are several disadvantages of leveraging the city's assets for its own telecommunications offerings. First, the City will be required to make a very large up front investment in any venture. This is usually a combination of city cash and revenue bond fund proceeds. The current Corona market is well served by incumbent providers and there would be a significant probability that a city funded project would not succeed. Given the up front investment requirements, the risk may be too much for the city to handle. Second, the city does not have any experience in building or operating a complex telecommunications network. Corona personnel are certainly trainable, but they have not had to work in a fiercely competitive environment where marketing is critical and subscribers switch providers often. Finally, no telecommunications venture could go forward without a full round of public hearings and comment periods. This will require the city to disclose fully the core strategies for its operation and lay open critical tactics for all competitors to see and argue over. This will be a distinct disadvantage for Corona.

9. Regulatory Review

Many state legislatures and regulators have made laws and rules prohibiting or restricting municipal utilities from offering retail telecommunications services, but that is not the case in California. As of this writing, the City of Corona is legally allowed to offer voice, video and data services to consumers and businesses.

Telephone services are the most highly regulated services in the state and the city will be required to obtain a CLEC license prior to any service offering. The city may also be required to file a Tariff with the California Public Utility Commission. A Tariff is used to publish a provider's terms, conditions and rates for regulated services like telephone.

Cable television services face pseudo regulation and the city will need to secure a local cable franchise just like any competitive cable company. The franchising process should go smoothly, but the city is not allowed to gain any special consideration. The city will also need to account for the typical franchise related expenses, even if no cash changes hands between the utility and the City.

The city will not be subject to any regulatory body in the offering of Internet services.

10. Negotiation Strategies

Uptown services was asked to outline several negotiation strategies that the City could use when dealing with telecommunications providers that wish to use rights of way in Corona. Different types of carriers will call for different negotiation approaches on the part of the City.

Right of way economics have changed with the loosening of telecommunications regulation. Before the introduction of widespread competition, carriers like Pacific Bell were allowed to recover all of their costs under a rate of return regime. High right of way costs were simply passed on to a captive market in the form of higher prices. However, in today's competitive market, competitive carriers do not have the luxury of raising prices according to factors like right of way price increases. They are more likely to avoid the areas with higher costs or use another carrier's facilities to serve the given market, which will either reduce the choice for consumers or limit capital investment in the community.

The basic purpose of right of way fees should be to recover costs associated with accommodating the placement of facilities on public property. This philosophy, referred to as "cost causation," provides the best incentive for competitive carriers to build in a community, while allowing the municipality to recover the costs that are incurred during construction, operation and maintenance of the facilities. For example, there will be costs associated with permitting, street closures, traffic management and ongoing contract management. There will also be opportunity costs related to the market value of land and pole attachment space that will play a part in pricing certain rights of way.

The following sections include discussion on some possible strategies for the types of carriers that the City might come across in right of way negotiations: Competitive Local Exchange Carriers (CLECs), long haul fiber, wireless, long distance telephone providers and cable television providers.

10.1. Competitive Local Exchange Carriers

CLECs have generally ignored the Corona market for a variety of reasons. While Time Warner Telecom owns a fiber route that passes through Corona, they do not drop off service to any customer in the City. As discussed in other sections of this report, it would be in the City's best interest to have a competitive alternative to Pacific Bell. It would offer medium and large businesses more choice in the area of high-capacity transport services for voice and data applications. For this reason, Uptown suggests that the City not take a hard line in negotiations with CLECs that plan to offer services within city limits.

10.1.1. Franchise Fees

State code does not allow municipalities to charge certified providers of telephone service a franchise fee. The law is less clear for providers of data services, but telephone revenues are not subject to any tax by municipalities.

10.1.2. Construction vs. Conduit Leasing

Construction of a telecommunications network can be a major headache for a city. Streets have to be cut, lawns are dug up and traffic is usually snarled as a result. The City should provide incentives for CLECs to use existing conduit systems rather constructing their own routes through Corona. The City currently owns several miles of conduit in the Time Warner Telecom route and will soon have spare ducts in the ATMS system, all of which could be made available for leasing. Uptown suggests that the City market these available conduits to prospective CLECs and discourage them from building new networks by imposing heavy one time permitting and construction fees.

If the City prices the conduit lease appropriately, most CLECs would probably prefer this option to that of building a new network. This would allow them to conserve their limited expansion capital. It would also allow them to match the cost of the network (monthly lease) more closely to monthly revenues. Finally, they would get to market sooner by pulling cable into conduit right away, instead of waiting for construction crews to place the conduit in the ground.

10.2. Long Haul Fiber and Long Distance Telephone Providers

Long haul fiber and long distance telephone provider networks contain very high capacity lines that interconnect at major telecommunications hubs around the U.S. One Wilshire in downtown Los Angeles is one of those hubs. It is highly unlikely that a long distance telephone or long haul fiber network would drop off any services in the Corona market, so the City would not see the

type of economic development benefit that they would associated with a new CLEC system. So, these carriers will call for a different approach to negotiating access to rights of way.

10.2.1. Franchise Fees

Franchise fees apply best to services that either originate or terminate in the given area. The providers being discussed in this section will simply be passing through and not dropping off service in Corona. So, the basis for collecting franchise or use fees does not exist. Also, state law does not allow Corona to assess revenue-based fees on telephone services.

10.2.2. Construction vs. Conduit Leasing

These providers are less likely to sublease conduit from the City than a CLEC, but it is still something that should be explored. First, these carriers operate very large national and international networks and the section passing through Corona would only be a very small piece of their overall systems. While the cost of constructing a new route through Corona may be expensive in the short run, it may be more advantageous in the long run than maintaining a long-term conduit lease arrangement with the City.

10.2.3. Spare Conduits

The best approach with these types of carriers is to secure an extra conduit in all new routes that are constructed. This conduit should be the same size as the others that are being installed by the carrier, which is typically 2" to 3" in diameter. This flexible conduit comes in large reels and the carrier should be required to order enough materials to include the City's conduit on their reels. The City should seek to eliminate any restrictions on the use of this conduit, so that it could be leased to other carriers like CLECs. Long haul providers will object to such a policy, but should give in due to their limited interest in the local market.

10.2.4. Spare Fiber

The City could also ask for fiber strands in the newly constructed routes, but spare conduit offers far greater flexibility for future applications. First, there are usually very few spare fibers available in these routes. Second, once the fiber strands are used up, there would not be any remedy for that particular route. This is compared to a conduit, where the City could pull multiple fiber cables in a single run.

10.3. Wireless Service Providers

Wireless services providers are currently offering a full range of voice and data services to consumers and businesses. They are constantly seeking to improve their local networks by adding new cell sites and upgrading their existing ones. Corona's options are limited when it comes to negotiating right of way agreements with this market segment. Some approaches are outlined next.

10.3.1. Micro Attachments

Metricom broke new ground with the City when it comes to attaching small devices to light poles. Their radios were small and fit on the cobra head of a standard streetlight. The typical agreement with Metricom called for \$60 per year in rent (including power) and 5% of gross revenues generated from subscribers in the municipality. While Metricom is no longer in business, micro attachments will grow in popularity as wireless service providers seek to improve their networks using low cost neighborhood repeaters, rather than full-blown cell sites.

Uptown suggests that the City continue with the Metricom model, but drop the revenue fee. This is not to say that the lease fee should be \$60 per year per pole. The lease fee should be enough to

cover the cost of powering the pole unit, the use of any land around the pole for equipment, a percentage of the annual operating cost for the pole and the cost of administering the contract. Uptown suggests that the City target \$1,000 per pole per year.

10.3.2. Major Attachments

Most wireless providers have installed their cell sites on major structures like radio towers, monopoles, water towers, buildings and smoke stacks. Antenna arrays that justify these types of attachments are driven by a significant amount of equipment that usually needs to be housed in an environmentally controlled enclosure. These are the reasons why such attachments warrant much higher lease rates. Lease rates will vary according to the demand for space on the given structure, alternative antenna sites and the carrier's need to improve service quality in the given area. Rates in the Corona area might vary from \$1,200 to \$2,500 per month.

Prime antenna sites are very valuable for a municipality and lease rates should be based on this value (an exception to the aforementioned cost causation philosophy). Uptown suggests that the City determine the value of a site by researching the latest lease deals in the area and calculating the opportunity cost of a long term lease on the structure in question. For example, if a carrier is only willing to pay \$1,500 per month for an attachment worth \$2,500, the opportunity cost of letting them attach would \$1,000 per month. In this case it would be better for Corona to hold out for another carrier to sign a long-term lease.

10.4. Competitive Cable Television Providers

Competitive cable television providers have enjoyed limited success in the U.S. Altrio and RCN both have networks in the Los Angeles area, but it does not appear that they will be expanding to Corona for quite some time. These providers are very different from the others discussed in this section, in that they target the consumer market by building in residential areas. The following sections outline a few approaches for dealing with competitive cable providers.

10.4.1. Franchise Fees

The current Municipal Code calls for a 5% in lieu fee for all open video system providers. This should also be the approach for any competitive cable television provider that seeks a standard franchise.

10.4.2. Construction vs. Conduit Lease

Competitive cable operators will not be in a position to benefit from a conduit lease arrangement in Corona. A new cable system will need pass every home in the community, which will call for the construction of over 150 miles of fiber and coax facilities. A conduit lease would alleviate less than 10% of that construction burden. These providers may be interested in using existing conduit runs to avoid cutting busy streets, but this is not likely to be a major factor in negotiations.

10.4.3. Public Access and Local Origination

The greatest opportunity for the City in dealing with a new cable operator will come in the form of better technology for public access and local origination. While AT&T does not maintain a local origination studio in Corona, there may be an opportunity for a new cable provider to invest in other local video capabilities (i.e. high school, library or community center).

11. Competitive Advantage – The Key to Long Term Success

The City of Corona must solve the following riddle prior to venturing into any telecommunications business:

“How will the City of Corona establish and maintain competitive advantage in the markets they serve?”

Pacific Bell and AT&T Broadband are well prepared for a competitive battle with the city. They’ve both built state-of-the-art networks (for their respective technologies) and they both maintain a significant local presence in the community. Together Pacific Bell and AT&T Broadband have also captured the critical “first mover advantage” in the area of high-speed Internet access services. Unfortunately, it’s much easier to be the first to sign up a subscriber than it is to steal one from a competitor. All is not lost though if the city can create and maintain a significant competitive advantage in the Corona market.

Several potential sources of competitive advantage for the city are listed next.

1. Tolerance for longer pay back makes it possible to deploy a network architecture to homes and businesses that could be far superior to the existing Pacific Bell and AT&T Broadband systems.
2. If a superior system were constructed, it could be the only architecture capable of delivering telephone, cable and super high-speed Internet services to homes and businesses. This will make it possible to offer very attractive bundles of services to consumers and businesses.
3. Municipal ownership inspires a sense of personal ownership with consumers and businesses.

Uptown believes that the key to creating and maintaining competitive advantage lies in building the best network in Corona for delivering telephone, cable and high-speed Internet services. Most municipalities have been able to establish competitive advantage in their markets because the incumbent cable operator’s system was so poorly designed to begin with. Given the current level of AT&T Broadband’s network in Corona, the city will be forced to go above and beyond the technology in a standard cable television system. This means that Fiber to the Home (FTTH) should be considered as the primary network architecture alternative.

Once a FTTH network is in place, the city will have the capability to offer bundled telephone, cable and high-speed Internet services at a discount to the combined price of the disparate offerings of AT&T Broadband and Pacific Bell. These networks also deliver a far superior high-speed Internet service compared to DSL and cable modem. Differentiating factors like premium quality of service and 100 Mbps peak data rates should be enough to woo many of the current DSL and AT&T Broadband subscribers to a future high-speed Internet service. Beyond bundling, the city has the opportunity to leverage its position as the only remaining locally owned (literally) provider of telecommunications services.

The city has also expressed interest offering finished high capacity services to large commercial customers. The CLEC / DLEC industry has been in constant turmoil for the past two years, which has made their customer base nervous. The city is in the position to leverage their reputation as a solid provider to become the “competitor of last resort.” Large users will always want an alternative to Pacific Bell and the city could step into the play that role for the long haul.

12. Review of Alternatives

The City of Corona can choose to pursue any number of different telecommunications strategies, from doing nothing to building a comprehensive full service network and offering telephone, Internet and cable services to consumers and businesses. While the city is most interested in focusing on the build, own and operate strategy, Uptown has also included discussions on resale and wholesale alternatives.

12.1. Upgrade City Network

One of Corona's primary goals is to upgrade the current city network into a more streamlined, consistent and cost effective tool for all city departments. A plan for a common architecture utilizing some of the existing telecommunications infrastructure is reviewed in this section. Detailed data and network diagrams supporting this discussion are listed in the Appendix.

12.1.1. Current Network Environment

The current network consists of 20 Cisco routers of varying capability. Central to the network is a 3Com CB9000 Ethernet Switch located at City Hall. This switch supports 72 - 10/100 ports, 20 - 100Mbps fiber ports, and four - 1Gbps ports. Utilization is reported to be low to moderate. Internet access is provided through a Cisco 4500 router and a Netscreen 50 firewall, both located at City Hall. This router has two T1 interfaces to the outside world, an Ethernet interface to the network, and a dial-up interface for backup communications to each of the remote locations.

The CoreBuilder products have been discontinued by 3Com with support phased out over a period of 5 years. Only repair support is available in years 3 - 5. Replacing this switch as soon as possible is highly recommended. Failure to replace the switch can result in lengthy network outages or the inability to take advantage of the latest network features.

Cisco routers and other equipment, if they are functioning properly, have room to grow, are not manufacturer discontinued, and can be redeployed in the network upgrade. Also incorporated in the current network are a number of leased lines. These circuits are slow, often costly, and present a quality of service problem since a third party maintains them. This proposal outlines a plan for replacing leased lines with high speed, fiber optic circuits owned and maintained by the City of Corona.

12.1.2. Network Upgrade Overview

The problem with most WANs today is that they are complex to configure. Separate network experts are required to support the WAN infrastructure alone. Traditional WANs are designed to accommodate the convergence of voice and data and do not offer scalable bandwidth. Most low-end routers or frame relay access devices (FRAD) are equipped with fractional T1 or one or two T1 interfaces, and cannot support bonded circuits or higher speed circuits, such as T3, Fast Ethernet and Gigabit Ethernet. In addition, operational costs increase because each type of new gear requires unique administration, management, additional training, and separate maintenance contracts.

The fiber optic core network, the most strategic component, must be designed to scale to the highest service level. This proposal outlines an IP based, fiber optic network system that can be configured to provide scalability, SONET like reliability, and advanced features over traditional SONET networks. The advantages over SONET are: lower costs of entry, reduced maintenance costs, availability of bandwidth on demand, and greater network efficiency in the use of fiber assets.

Advances in technology now make it possible to implement highly reliable networks based on a flexible and efficient packet model. Voice, Video, and Data services are all available on packet networks. With Ethernet now the de facto standard for LAN traffic, enterprise networks can seamlessly extend into a metro or wide area network (MAN, WAN) using compatible native mode protocols, instead of undergoing multiple conversions to and from ATM and SONET. In addition to simplifying network topologies, it also makes enterprise networks much more scalable and maintainable. A packet based network is recommended for the City of Corona because it is relative easy to maintain and supports a wide variety of applications. The advantages of a packet network are:

- Circuit is shared based on packets rather than time slices; efficient use of the available bandwidth can be achieved.
- The entry-level cost of a packet-based network is 20% to 40% lower than that of a comparably configured SONET network.
- The ability to control bandwidth utilization and prioritize some packets over others.
- On-going maintenance is reduced due to the advanced remote monitoring and provisioning capabilities of the network systems.
- A widely available knowledge base in Ethernet LANs can be tapped, lowering the cost of training and support.

Another advantage of a packet network is the ability to incorporate wireless segments. Wireless networks are a timely and cost effective method of expanding the service area for high speed Internet and private data. As demand increases and the fiber network is extended, the wireless equipment will be redeployed to cover new expansion areas. This process will continue until the desired coverage area is reached.

The physical network will be configured as a self-healing ring, using standard packet based protocols. This architecture provides a high degree of reliability, and flexibility with the lowest relative cost. The logical network topology, overlaid on top of the physical network, will utilize standard protocols to build a star or hybrid star/ring topology to support the widest range of network services.

Depending on how the city chooses to manage the network, each service (voice, data, video, etc.) may be delivered from city hall to remote locations using a star topology. Network management may be simplified by utilizing a hybrid star/ring topology, where specific services like private network data, or bandwidth controlled services like voice, are delivered point-to-point with a star topology, where ubiquitous, low priority services like Internet, are delivered to each node with a ring topology.

The physical network will utilize a Layer-2 design. A layer-2 network is easier to build and maintain compared to Layer-3 routed networks, which are prone to delay, routing loops and other logic errors, as well as protocol restrictions.

Multimedia communication requires a network with very low latency (the time it takes packets to travel from end-to-end), low jitter (the variance in time between packets), and minimal packet loss (due to errors or congestion). High latency (in excess of 150ms) can create echo in voice transmissions or ghosts in video transmissions. Packet loss and jitter lead to noise and dropouts. Consequently, most traditional Layer-3 routers cannot support this type of high quality

transmission. The Layer-2 architecture will provide the greatest flexibility for efficiently transporting traffic with various characteristics over the same network.

12.1.3. Traffic Monitoring and Control

Should the City of Corona decide to implement an IP based traffic control and monitoring system, this network could handle the initial stages of that deployment as well. Depending on the number of control points and the type of network equipment required to support those devices, an additional fiber pair might be required. The equipment proposed for this implementation is not hardened for use in extreme outdoor conditions. Hardened IP network equipment may be purchased, but it may be incompatible with the data network equipment. Some hardened equipment manufacturers utilize WDM technology to allow bi-directional, full-duplex traffic over a single fiber. This type of equipment is incompatible with all other network equipment, requiring separate fiber. An alternative is to provide an environmentally controlled outdoor enclosure for the standard networking equipment.

An alternative to fiber for providing high-speed remote connectivity is VDSL. This technology offers 10Mbps Ethernet over Category 1,2,3, or 5 UTP copper wire, at distances up to 4,500 feet. VDSL service can be used over existing copper wire to deliver a high-speed network connection to traffic control units; remote, IP based video systems; or low use remote buildings within ¾ mile of a network hub.

12.1.4. Services

Services are the applications that utilize the network. This plan will discuss the following services: private data, Internet (public data), voice, and video. Each service can be implemented independently over time as budget and demand permit. H.323 is the global standard for packet-based multimedia communication like Voice over IP and Video over IP. Due to the technical requirements of real-time multimedia communications, success requires high quality of service (QoS).

12.1.4.1. Private Data

Private data services are the network systems used to manage city services. These can be accounting systems, GIS systems, traffic control and monitoring systems, or any number of other services. On a layer-2 network, users will connect to the system servers over a defined VLAN. Each service will have a unique numbered tag that identifies the traffic over all other traffic on the network. Each VLAN can then be given its priority on the network. Most of this data will be classified in the middle priority ranges, lower than Voice and Video, but higher than Internet. Private traffic will be identified and tagged based on the destination server IP address.

12.1.4.2. Internet

Internet should be defined as a best effort service. If and when there is congestion on the network, all other traffic will have priority over Internet traffic. One VLAN should be defined for Internet at every location. Since the Internet is a Layer-3 service, IP address will be required for each device participating in the Internet service. This configuration adds another layer of Internet filtering. If this service is to be made available at a specific location, then the VLAN is defined; otherwise, the Internet service will not be accessible at that location. If restricting Internet access at certain locations is not a concern, then Internet traffic can be directed to the primary network VLAN, thereby simplifying the configuration. By default, all traffic not otherwise identified will be tagged as Internet traffic.

12.1.4.3. Voice

This traffic will require special equipment at each location. VoIP equipment converts analog voice into IP Voice and routes the packets onto the network. Voice, like Internet, is a Layer 3, routed service, which requires equipment with IP addresses at both ends of the network segment. Due to high quality and reliability characteristics, voice and voice signaling will have the highest priorities in the network.

12.1.4.4. Video

Video traffic requires a relatively constant stream of packets for smooth, error free operation. The bandwidth required for compressed, full motion video transmission varies between 3 and 6 Mbps. Highly compressed, less than full motion video of adequate quality, can be transmitted in as little as 512Kbps of bandwidth.

12.1.5. Proposed Architecture

The fiber optic core network, the most strategic component, must be designed to scale to the highest service level. It will therefore require the most attention and the largest percentage of the budget. To achieve network reliability, a combination of two network architectures is proposed for the City of Corona network: a diverse ring configuration, and a redundant collapsed ring configuration. For purposes of this discussion, a network node is any location where optical fiber is terminated on active electronic network equipment. Backup power, automatic fire protection, and earthquake tolerant installations are assumed at each node.

12.1.5.1. Diverse Ring

A diverse ring provides two geographically separate fiber paths from any node on the ring. This configuration requires two fiber pairs (four individual fibers). One pair routed to and from each node in a different direction than the second pair. This is typically referred to as an East/West configuration, and provides a backup data path that protects the node from total loss of service due to a fiber cut or equipment failure. Depending on the importance of the location, the hardware at that location may be two cards on a single chassis, to two separate network devices (see diverse and redundant hardware below).

12.1.5.2. Collapsed Ring

A collapsed ring provides a redundant, but not diverse fiber optic circuit from a network node. This configuration requires two fiber pairs (four individual fibers) in one bundle. This provides protection from hardware failure, but will not protect from a fiber cut. As an interim, cost saving measure, or to accommodate limited fiber availability, a non-redundant, single fiber pair can be used in place of the two fiber pair collapsed ring. Supporting the fiber configurations are various levels of hardware redundancy.

12.1.5.3. Diverse Hardware

Diverse hardware provides not only redundant cards, but also redundant chassis at a network node. To be truly diverse, the chassis must be in a hot standby configuration, and be separated by at least six feet, with adequate fire, earthquake, and power protection.

12.1.5.4.Redundant Hardware

Redundant hardware provides support for a backup circuit on a single network device. This configuration protects the network in the event of a card or port level hardware failure, but is susceptible to complete hardware failure. The redundant hardware, depending on equipment features, may be configured as a hot standby or a warm standby. A hot standby automatically fails-over upon detection of a network failure, a warm standby requires manual intervention before the network will recover.

12.1.5.5.Cold Standby

This is a lower-cost, procedural alternative to diverse or redundant hardware. In this configuration, an inventory of spare cards and chassis are maintained (usually in a centralized location) and dispatched immediately upon a network failure. The advantage to this method is that fewer redundant hardware components are purchased; subsequently the cost is lower. The disadvantage is that extended network outages may occur.

12.2. Offer High Capacity Fiber Based Services

Pacific Bell has a virtual monopoly in Corona for high capacity fiber based services. One strategy to overcome this problem would be the City to build a fiber network and offer services in competition to Pacific Bell. This section outlines the issues associated with this strategy.

12.2.1. Critical Success Factors

CLECs have installed the majority of intracity fiber over the past five years. CLECs provide services that are competitive with the incumbent local telephone company and usually own a local telephone switch that connects to their metropolitan fiber ring(s). Generally, CLECs use fiber facilities for four primary purposes:

1. To connect large customers directly to a long distance provider Point of Presence (POP).
2. To connect large customers to their local telephone switch.
3. To connect large customers to the Internet backbone via a major ISP.
4. To connect multiple large customer locations to each other.

In an ideal world, all four of these purposes would be fulfilled by the deployment of a fiber ring. Unfortunately, it does not appear that Corona can clearly justify any of these four strategies. First, Corona is not home to any long distance company POPs. While there are number of very high volume long distance users in the area, the majority of long distance carrier POPs are in downtown Los Angeles. Customers wanting to connect directly to their long distance carrier must find a carrier capable of taking them all the way to downtown Los Angeles.

Second, there are no CLEC switches located in Corona. All of the local CLEC switches are located in Los Angeles and Orange County, which makes any Corona network a small link in the overall route to connect to these locations.

Third, a Corona based fiber system would play a small part in any Internet backbone connection. The true value of any Internet service provider is in how closely they connect to the Internet backbone. The closest backbone connection point for Corona is in downtown Los Angeles. So to get from Corona to the backbone, a subscriber might traverse as many as two or three routes - first within Corona and then on to Los Angeles.

Finally, Corona does not have enough local businesses requiring high capacity intracity fiber connections that are willing to switch to a CLEC. If the nature of the given business calls for moving massive amounts of voice, data or video information on a regular basis, the cost of a high capacity fiber connection between all city facilities might be justified.

The main roadblock to success with this strategy is the isolated nature of the Corona area as it relates to telecommunications. A carrier cannot offer services in Corona without having a dedicated fiber line to One Wilshire in Los Angeles. There are two options to acquire such a facility – build or lease. Either option is certainly viable, but each option will be very costly and seems to take the city away from leveraging its local assets. Uptown cannot recommend this strategy for the City.

12.3. Create Major Telecommunications Hub for Region

Typically, telecommunications carriers locate hubs in areas of strategic importance to their operation. These areas are either of geographic importance to the network, or a location with high density industrial and office population. At this time, Corona does not offer either of these options.

To attract a major telecommunications carrier to Corona, specific plans for commercial development of an office and or industrial park will have to be discussed with several carriers having a presence in Corona. Broadwing, Time Warner Telecom, and Qwest are three candidates for discussion based on their presence and services offered. Uptown is willing to pursue this option further by contacting these directly and initiating discussions for potential partnerships. Uptown cannot recommend this strategy until more information on cost and feasibility is obtained.

12.4. Install Fiber Microduct System

New fiber technology, called fiber microduct, can allow Corona to lay the infrastructure for a citywide fiber network with minimal effort and expense. Microduct conduit combined with what's called a 'blown fiber' distribution system makes it possible to build and scale a city owned fiber system as the demand dictates.

The installation process begins with the laying of 1-3" microduct conduit within the city's new traffic management system and any open trench created by running standard utility services to new development areas. The conduit is empty at the time of installation, is completely weatherproof, and requires no special skills or training to install. It can be installed overhead or underground. The microduct is actually made up of many smaller (3-5mm) plastic tubes that can carry up to 72 fibers each. The material itself looks like a garden hose filled with straws. Each tube can be dedicated to a specific service or service provider, as Corona deems necessary.

Once the microduct is in place, new fiber bundles can be blown through a single tube using compressed air and some special fiber feeding equipment. This method minimizes field splicing which removes much of the time and cost associated with installing fiber based services.

Initial costs for empty microduct conduit only runs about \$1 per foot. This makes for a very low cost initiative for the city to incorporate in existing city upgrade projects. As mentioned earlier, the new traffic management system and new utility expansion are prime examples of implementation options. Once installed, the microduct is available at any time to accommodate a wide variety of fiber configurations.

12.5. Resale

The city could pursue a strategy to resell the base services of one or more incumbent providers. A resale strategy generally consumes less capital, but returns lower margins than a build, own and operate approach. The best resellers possess world-class sales and marketing expertise and are capable of moving great volume year round. The top opportunities for resale in the Corona area are discussed next.

12.5.1. Cellular Telephone Service

Cellular telephone service is sold through thousands of agents and resellers throughout the U.S. The city could use the customer service and back office infrastructure of the utility to market and sell Cingular, Verizon or PacBell branded service. These providers would pay a fixed amount per new addition and take over service and billing for the life of the contract. The city would be responsible for all marketing, promotion and sales activities.

12.5.2. Long Distance Service

The city could pursue the resale of long distance telephone service. Several large providers of long distance service offer resale business structures for third party operators and affinity groups. Long distance resale can take on many different faces – from a branded service to an agency for a major long distance provider. If the city offered its own branded service, they would be required to buy wholesale minutes from the baseline carrier and sell them at retail to their long distance subscribers. The city would be required to purchase a minimum number of minutes per month. They would also need to provide their own customer service, billing and collections functions. The alternative would be to simply sell AT&T or Sprint long distance services from the city's call center and receive \$X per new addition from the given provider.

12.5.3. Internet Access

The city also has several options in reselling dial-up and broadband Internet access. There are a number of wholesale providers that maintain dial-up modem banks throughout the southern California area. The city could pursue a relationship that allows for custom branding but, as with the above-mentioned services, would be required to provide their own operational support of this service.

In reselling broadband access, the city's only realistic choice is to partner with an existing DSL ISP in the area to provide a branded DSL service. AT&T Broadband is not likely, and not required, to open their cable network to other providers. The primary drawback in this case is the reliance on PacBell to deliver a city labeled service.

12.5.4. Resale Summary

Uptown does not generally recommend that public power utilities pursue a resale strategy. Reselling tends to be extremely competitive and can be fraught with business problems. The city has built a reputation for quality and value over several decades that will be put in the hands of another service provider in a resale strategy. The city will not have control over the baseline service delivery of any resold service and therefore is at the mercy of the provider partner to deliver quality service on a consistent basis. If the provider lets the subscriber down, it is likely to hurt the city's image in the long run.

Besides the problem of having to rely on third party service providers, the city also does not have the marketing and sales muscle to consistently sell large quantities of service month after month. Margins in the resale business are so thin that the only way to make enough profit is to create massive scale and sell large quantities on a regular basis. The city could attempt to attain scale in two ways – either by selling a single service beyond the utility territory or by offering a wide

variety of services in the current service area. Selling to a broader geographic audience improves the odds of selling more of a single service and adding more services improves the odds that the sales rep will have at least one thing that the prospective customer would want to buy.

In summary, the chances of sustained success for the city are low and Uptown does not recommend pursuing such a strategy. And since resale is the only feasible way to offer any type of cellular phone service, Uptown recommends that this product not be offered by Corona.

12.6. Build, Own and Operate Full Service Network

Many municipalities have chosen to build full service networks (FSNs) capable of delivering cable television, high-speed Internet and local telephone services to their constituents. The reasons for building a new network vary, but the primary advantage of this approach is long-term profitability of the venture. Building a network capable of supporting the three core services is very capital intensive on the front end, but also provides for full control of service quality and higher margins for most services. Once a network is in place, the recurring incremental costs to provide services is relatively small compared to a resale model where the service provider is paying to use the base network forever.

Two major scenarios will be discussed that can offer differing combinations of telecommunications services. The hybrid fiber coax (HFC) network is limited to video and data services. Voice services can be delivered over this architecture, but has incremental system and equipment requirements that make that option financially unfeasible. The fiber to the home (FTTH) scenario includes voice, video and data services in the model. The FTTH architecture uses its inherently higher bandwidth capacity to better offer any combination of the three major product lines. Both technologies are discussed in more detail later in this section.

This section outlines the services that can be offered over a full service network, the alternative architectures being considered today and the business case for building, owning and operating a full service network.

12.6.1. Full Service Network Based Service Offerings and Capabilities

Any network that the city would install to compete with AT&T Broadband and Pacific Bell would be capable of delivering combinations of voice, video and high-speed data services over the same facility to the home or business. This section discusses the actual retail services that could be offered if a FSN were installed.

12.6.1.1. Telephone Service

Local telephone service or basic dial tone is the baseline voice service that could be offered over the FTTH network. Dial tone service has changed little over the last twenty years. It is usually provided with touch-tone capability, access to 411 information, access to operator services, access to all long distance providers and access to 911 emergency services. In addition to these fundamental access services, subscribers will expect the same custom calling and enhanced services being offered by Pacific Bell.

The city would not be restricted from providing competitive long distance services along with local telephone services. The local provider has a distinct advantage over the traditional long distance providers when it comes to acquiring long distance subscribers. After all, local service is almost always ordered prior to long distance and the local service representative is the main solicitor for each subscriber's choice for long distance service provider. This is one of the main

reasons why Pacific Bell has not been allowed to compete with the major long distance providers until a case is made that local competition is in full swing.

12.6.1.2. Video Entertainment Service

Cable television has become more complicated to package and sell since the introduction of satellite video service providers. Cable bills can be as small as \$4 per month or as large as \$80 per month, depending on the services being purchased. With the FSN, the city would be in a position to offer more channels than AT&T Broadband. The real question is how the city wants to differentiate itself from AT&T Broadband. That can only be answered through some careful market research within the service territory. AT&T Broadband's packaging strategies are largely dictated by their national presence, so any major local changes to their line-up are frowned upon by the corporate office. The city is not burdened with such national interests and has the capability to tailor packages to the wants and needs of the local market.

12.6.1.3. High-Speed Internet Access Service

The killer application for the FSN is high-speed Internet access service. The challenge for the city will be the differentiation of its Internet access service over the offerings of those competitors discussed previously in this document. The city should seek to find a position that resonates with the consumer. This may be a low cost alternative, or a higher cost premium service. For example, most cable modem services provide one data "pipe" to an entire neighborhood. The speed being provided to any individual subscriber in the neighborhood is a function of all activity in the neighborhood. A premium service offering may provide a guaranteed bandwidth independent of the activity in the rest of the neighborhood.

12.6.1.4. Low Speed Internet Access Service

DSL and cable modem share is expected to grow to a combined 38% by 2006, but the dial-up market share only shrinks to 59%. Satellite and dedicated connections pick up a collective 2.4% by 2006. There are many reasons for the expected staying power of dial-up technology, foremost of which is price. Some Internet users are simply not going to be willing to pay \$50 or more for speed, when they can live with a \$20 dial-up connection. This does not mean that the city cannot convert that market to a rate limited version of their high-speed Internet service (128kbps / 64kbps).

The two major Canadian cable operators, Shaw and Rogers, introduced this product concept in late 2001. AT&T Broadband and Comcast have also recently announced similar product tiering strategies. At this time, results are not available to determine their level of success in capturing a material share the dial-up market.

12.6.2. Partnering Strategies

Public power utilities often consider the strategy of partnering with an experienced third party provider to offer one or more services on their FSN. Internet and telephone operations are typically considered candidates for partnering arrangements, but not cable. The city is perfectly capable of building and operating a cable television business. Over 60 municipal utilities currently operate cable television systems across the U.S. and the vast majority of cable services are offered under the utility brand. Some utilities have been forced by law or community pressure to develop wholesale business structures for cable, but there has not been enough time to determine if those implementations will be financially viable.

Offering local telephone service is an extremely complex set of tasks that most public power utilities have chosen to avoid altogether. While over 60 municipalities are currently offering cable television services, only 13 have decided to offer local telephone services. A local telephone provider must be capable of passing calls to and from all long distance companies and all other local telephone companies in the area. In addition, all call information must be recorded accurately for both subscriber and other carrier billing purposes. The city could work to develop the required skill sets to support local telephone service in-house, but Uptown recommends that they seek out an experienced CLEC as a partner.

Partnering makes sense for telephone service, but not Internet service. The city should develop their own internal capabilities and offer a branded Internet service. Most municipal utilities have chosen this route with success and Corona should follow suit. Opening the network to other ISPs is also an option that the city may want to pursue in order to increase network utilization. A wholesale offering would still generate cash flow for the city, albeit less than the retail side of the business.

12.6.3. Full Service Network Architectures

Two basic architectures can be used to deliver voice, data and video to the same household - hybrid fiber coax (HFC) and fiber to the home (FTTH). While HFC is the predominant solution being deployed by cable operators and municipalities today, the cost of FTTH has dropped dramatically over the past 18 months. This section outlines the basic issues for these three alternatives.

12.6.3.1. Hybrid Fiber Coax

Television signals are analog. The problem with analog technology is that every time a signal is amplified, noise is amplified as well. Cable signals are typically sent out to neighborhoods and homes from a central point in the community. Main trunk lines are subdivided several times into feeders, then distribution and eventually the subscriber drop. Amplifiers are placed at intervals according to the desired signal strength. Each amplifier denotes an "active" and a system with too many actives cannot deliver high quality signals to subscribers.

The introduction of fiber optic transport technology has improved the quality of cable architectures. A single fiber run can replace multiple actives in a trunk line. This eliminates a great deal of noise in the system and extends the reach for the cable signal. Fiber trunks are used to serve multiple home nodes, with node sizing ranging from 125 to 1,000 homes. Homes in each node are served via regular coax lines with a limited number of actives before reaching the last home in the node.

HFC can be used to deliver voice, data and video. Most cable operators are delivering video over some form of HFC and all high-speed data services require HFC for quality reasons. Voice over HFC has been possible for several years and is now economical to deploy in large systems. Cox and AT&T Broadband are aggressively implementing and selling local telephone services in their larger HFC systems.

The advantages of the HFC architecture are clear for an incumbent cable provider. First, they have a large investment in a coax distribution system and skilled RF technicians that are trained in managing active components. Second, the technology is very mature and appears to be as reliable as analog is going to get. Finally, whether starting from scratch or with an existing cable system, HFC is still the least expensive solution for delivering cable and data services to the home.

HFC has two key disadvantages for competitive service providers. First, it was designed as an *evolutionary* solution for incumbent cable operators that needed to improve service and increase channel capacity. Second, actives are still required to reach every home in a fiber node with more than 100 homes. Actives are trouble spots for noise ingress and can prove to be maintenance nightmares for poor operators. Another problem, specifically for utilities with underground plant is the electrical nature of the last mile facilities to the home. Unless the utility has spare conduit available, they would need to either direct bury the coax portion of the plant or place another conduit specifically for the coax. Since the city has very limited electrical infrastructure currently in place, any new FSN will essentially be built from scratch.

As stated earlier, the city will not be creating a clear competitive advantage by building a HFC system. Corona would be limited to offering the same services as AT&T Broadband and differentiating the offerings would be much more difficult. Again, it is difficult for Uptown to recommend that the city use the HFC architecture.

12.6.3.2.Fiber To the Home (FTTH)

This section will outline the leading fiber to the home approaches. Passive optical networks are networks that contain no active optical components in the distribution plant, while active optical networks typically have active components between a central point and the end user. Each approach is outlined next.

12.6.3.2.1. Passive Optical Network (PON) Approach

The PON architecture has evolved significantly over the past several years. The current approach calls for video to be transmitted over a separate fiber from voice and data. So each subscriber is served by one video fiber and another fiber for voice and data. Network interface units (NIUs) are mounted near the other utility connections on a subscriber's home. There are three primary NIU configurations: video only; video, telephone and data; and video, voice and data for multiple dwelling units. Head end lasers for video and telephone/data services can serve 32 subscribers. The design calls for fibers to originate at the head end location and go through one or more optical splitters before reaching the subscriber unit. For example, one fiber carrying video and one fiber carrying telephone and data might go from the head end to a node (pedestal enclosure) in a neighborhood that serves 32 subscribers. The pedestal would contain a 1:32 optical splitter with the head end fiber on one side and 32 subscriber fibers on the other. Node sizing will typically be around 128 subscribers, or 256 homes @ 50% penetration. This size node would require eight head end fibers and be the size of a 2'-3' cube. Such a structure would best be placed on the ground on a concrete pad.

The initial construction would entail placing fiber past each home and business that might be served by the city. Node enclosures would also be placed and connected to the head end prior to selling any services. Once a subscriber signs up for service, a technician would be dispatched to install a fiber drop from the nearest pole and install the NIU on the home. The drop would need to be attached to the serving fiber on the drop pole and then the appropriate connection would need be made at the node location. NIU interfaces include (2) standard phone jacks, (1) RJ45 Ethernet jack for data and (1) standard cable television connector. The telephone and cable connections can be switched from Pacific Bell and AT&T Broadband and CAT5 cabling would be required from the RJ45 port to the home computer (no cable modem required).

12.6.3.2.2. Active Optical Network – Gigabit Ethernet

Active Gigabit Ethernet FTTH systems offer an elegant alternative to the PON. The current list of vendors includes World Wide Packets, Wave7 Optics and Nbase XyPlex. The basic architecture is similar to the PON, except for the need for an intermediate switching device between subscribers and the core network. These switches are located in the field and can be pedestal or pole mounted. They connect to the head end over multiple GigE ports and to subscribers over lower speed links (100Mbps).

This approach tends to use less fiber than a PON and allows for more control over bandwidth to each subscriber. Voice and data services are delivered over an Ethernet bit stream and video is delivered using a different fiber or wavelength in an analog format. The Ethernet bit stream will also support video delivery, but most television sets are not capable of receiving Ethernet video. The primary advantage of an active system is the network management and control. The primary drawback is the fact that active electronics are located in the field.

The debate is raging over the best solution be it ATM PON, Ethernet PON or active Ethernet. However, the riddle will not be solved until more of these systems are deployed and their performance can be measured in the field. Each supplier has announced deployments of the their systems for various public power, independent telephone and incumbent cable television customers. Public power FTTH trials and deployments have been started in Grant County PUD (Washington), Provo City Power (Utah), Bristol Utilities (Virginia), Palo Alto Utilities (California) and Taunton Municipal Lighting Plant (Massachusetts).

12.6.3.3. Architecture Recommendation

Uptown recommends that Corona pursue the development of an active Ethernet FTTH system. The data throughput of any FTTH alternative is far superior to that provided by either cable modem or DSL solutions. Better yet, no modem is required so the city would be able to add Internet subscribers with no incremental equipment cost.

12.6.4. Full Service Network Business Case

Uptown Services has developed a full service network business model for use in this assessment. The model was designed to demonstrate the financial risks and benefits of deploying various elements of the FSN. The model is capable of running any number of combinations of telephone, video and Internet access services. The output of the model is intended to assist public power executives in making strategic telecommunications decisions. Model results should only be used for general planning purposes and are not intended for use in any detailed engineering or operations activities.

Several scenarios were run for the city of Corona. Various levels of HFC and FTTH models were generated for comparison. This section will highlight what Uptown views as the 4 most relevant; FTTH Baseline, FTTH Best Case, HFC \$450 Baseline and HFC \$450 Best Case. The results of each scenario and the differentiating factors for each are discussed in the following sections.

12.6.4.1. Assumption Descriptions

The FSN business model contains over 200 variable inputs. A detailed chart of these assumption variables is available in the Appendix of this report.

12.6.4.2. Key Outcome Descriptions

This section describes a few of the key dependent variables (outcomes) in the FSN business model. Uptown's business model provides a cash flow summary (unleveraged) and a bond summary (leveraged). Key outcomes in the business model are described in Table 29.

Table 29 – Key Outcome Descriptions

Outcome	Description
Bond Anticipation Note (BAN)	It is assumed that the city will take out annual BANs during the construction of the network. BANs differ from bonds in that the borrower is only required to pay the interest and not any principal.
Bond Amount	It is assumed that the two-year BAN balance will be rolled into a long-term bond issue.
Annual Bond Payment	Principal and Interest payment for the stated bond amount.
Operating Income	Operating income for is total revenue less total expense less bond payments.
Cash Generated	Cash Generated is annual operating income less annual capital spending.
Cumulative Cash	Cumulative Cash is the running total of annual cash flow from the first year of the plan.
Bond Balance	Bond balance according to a simple loan amortization schedule.
Interest Income	The model assumes that all bond proceeds are deposited in a city account. This account is assumed to be interest bearing when a positive cash balance is present.
IRR	Internal Rate of Return (IRR) is a financial measure that describes the return for the given cash flows of the model. IRR should exceed the hurdle rate within a reasonable period of time for the business case to be sound.
Peak Negative Cumulative Cash	The largest negative cumulative cash balance over the period of the project plan.
Net Cash	Number of years before annual cash flow becomes greater than \$0.

12.6.5. Primary Assumptions

This section lists the key assumptions and the values used in the Corona business case. A full business model (with a complete listing of assumptions) is provided in the Appendix of this document.

Table 30 – Total Market Assumptions

Assumption	Value	Notes
Residential Meters Year1	40,615	Annual growth is assumed to be 1%
Commercial Meters Year1	2,500	Annual growth is assumed to be 1%

Table 31 – Service Pricing Assumptions

Assumption	Value	Notes
Basic cable pricing	\$10.00	Monthly charge for family oriented line-up
Expanded basic cable pricing	\$20.00	Monthly charge in addition to basic cable
Digital basic cable pricing	\$10.00	Monthly charge in addition to expanded basic cable
Residential Internet pricing	\$40.00	Monthly charge for basic level of service
Commercial Internet pricing	\$75.00	Monthly charge for basic level of service

Table 32 - Staff Compensation Assumptions

Assumption	Value	Notes
General Manager	\$120,000	Unloaded total compensation
System Administrator / Engineer	\$75,000	Unloaded total compensation
Marketing / PR Coordinator	\$80,000	Unloaded total compensation
Chief Technician / Supervisor	\$75,000	Unloaded total compensation
Service Technician	\$60,000	Unloaded total compensation
Customer Service Representative	\$40,000	Unloaded total compensation
Overhead loading factor	35%	Floor space, furniture, benefits, etc

Table 33 – HFC Construction Assumptions

Assumption	Value	Notes
Meters passed Year1	50%	
Meters passed Year2	100%	
Cost per meter passed	\$450	Weighted average based on construction estimates.

Table 34 – Variable Capital Assumptions

Assumption	Value	Notes
Service drop installation cost	\$75.00	Includes cost of terminating drop on dwelling
Cable modem cost	\$100.00	Wholesale cost to Corona
Digital Set Top Box cost	\$250.00	Including remote

12.6.6. Business Case Results

Uptown used the business model to determine the most likely outcome for the construction of an HFC or FTTH architecture that is used to offer cable, high-speed Internet and/or telephone services. A comprehensive sensitivity analysis was then completed using Uptown's proprietary Ambassador decision support software.

12.6.6.1. HFC Results

Uptown evaluated several different HFC solutions for Corona. The key differentiator for any HFC design is the number of homes served per fiber node. Current node sizing in the cable industry ranges from 1,000 down to 250 homes per node. Most new networks (municipal utilities) are employing node sizing of 500 homes or less. Reducing the number of homes per node is more expensive, but broadband capacity is much higher per home. This allows for higher speed data connections and more capacity for interactive applications like telephone using Voice Over Internet Protocol (VOIP), gaming and video conferencing. Lowering the homes per node also reduces the number of amplifiers and line extenders ("actives") beyond the fiber transceiver. The ultimate HFC design, Passive HFC, does not require any actives beyond the node. Passive HFC node sizing is typically 75 homes or less.

HFC construction budgets are best described in terms of "cost per home/meter passed." This measure covers the cost to build the network past each home and business in the service area, but does not include the cost of running service drops and installing home based electronics. The actual cost per home passed is a function of the average construction cost (materials and labor) per mile of plant and the number of homes per mile. Homes per node is best estimated by the average cost per mile of plant, so Uptown used the following assumptions and formula to calculate the cost per mile of plant for different construction budgets used in the business case:

1. There are approximately 43,000 total meters in the Corona service territory.
2. 70% of the outside plant is aerial and 30% is buried directly in the ground.
3. There are approximately 350 miles of outside plant.

$$\text{Cost per Mile of Plant} = \frac{(43,000 \text{ meters passed}) * (\text{per home passed construction budget})}{(350 \text{ miles of plant})}$$

Uptown calculated the average cost per plant mile for construction budgets ranging from \$350 to \$550. Table 35 shows the results of these calculations. Table 35 also contains estimated node sizing for each scenario. These estimates are based on the expert opinion of engineers from Peregrine Communications of Golden, Colorado. Uptown sought out their advice because of

their level of experience in engineering and constructing a full range of HFC systems with node sizing ranging from 60 to 600 homes. Finally, the projected number of actives in coax each line beyond the fiber node is listed.

Table 35 – Per Plant Mile Costs for Different Construction Budgets

Engineering Factors	HFC Construction Scenarios (per meter passed)				
	\$350	\$400	\$450	\$500	\$550
Cost per mile of plant	\$43,000	\$49,150	\$55,285	\$61,425	\$67,575
Estimated Node Size	500	375	250	125	75
Actives Beyond Node ³	6	4	2	1	0

Corona should target a construction budget of \$450 per meter passed for several reasons. The number of actives needed to reach every subscriber on a coax leg is very low. This will save a significant amount of maintenance expense over the life of the system. Also, most FTTH aggregation points are engineered to serve multiples of 24 to 32 homes. So a 250 home HFC fiber node should support a smooth should Corona choose to migrate their network to FTTH.

Uptown ran the FSN business model for all five construction budgets listed above. All five scenarios are run at what can be called a 'baseline' level that uses market penetration data based on the quantitative data from the residential and commercial market research conducted by SDS in the Corona market earlier this year. Later in this section, a comparison with a higher penetration 'best case' scenario will be discussed.

Table 36 – Funding Requirements for Different Construction Budgets

Funding Breakdown	HFC Construction Scenarios (per meter passed)				
	\$350	\$400	\$450	\$500	\$550
Bond Amount	\$21.8M	\$24.2M	\$26.4M	\$28.8M	\$31.2M
Utility Cash Required	\$3.1M	\$3.6M	\$4.1M	\$5.2M	\$6.2M
Total Funding Required	\$24.9M	\$27.8M	\$30.5M	\$34.0M	\$37.4M

Bonds would be used to finance the majority of the new telecommunications venture. It is assumed that Bond Anticipation Notes (BANs) would be used to fund the first two years of construction and operation. The advantage of a BAN is that Corona would only need to pay the interest accrued on an annual basis. The two year BAN balance would be rolled into a 10 year bond at the start of the third year at which time the city must begin making payments that cover both principal and interest.

³ This is the maximum number of actives from the fiber node to the last customer in a single leg of coax plant. Each fiber node has four coax ports, so the total number of actives "per" node is actually four times the number listed in Table 35.

Table 37 – Cash Flow Measures for Different Construction Budgets

Cash Flow Measure	HFC Construction Scenarios (per meter passed)				
	\$350	\$400	\$450	\$500	\$550
Years to Cash Positive	3	3	3	3	3
Years to Pay Off Bond ⁴	10	11	12	12	12

Table 37 shows that any construction budget produces very similar cash flow and bond pay off results. The less than drastic difference in results can be attributed to the maintenance levels for each level of the HFC network. Spending less per home in the initial construction will lead to more active elements in the network that will require maintenance expense over the life of the project. Spending more per home initially will minimize these expenses.

Table 38 – More Financial Measures for Different Construction Budgets

End of Plan Measure	HFC Construction Scenarios (per meter passed)				
	\$350	\$400	\$450	\$500	\$550
Cumulative Cash Year10	\$5.3M	\$2.9M	\$2.2M	\$584K	\$25K
Bond Balance Year10	(\$5.3M)	(\$5.8M)	(\$6.4M)	(\$6.9M)	(\$7.5M)
Net Cash Reserve Year10	\$93K	(\$2.9M)	(\$4.1M)	(\$6.4M)	(\$7.5M)
Annual Cash Flow Year10	\$1.1M	\$660K	\$530K	\$145K	(\$94K)
Annual Bond Payment	\$2.8M	\$3.1M	\$3.4M	\$3.7M	\$4.0M

The ten-year measures listed above show that the business case for most of the construction scenarios is not very healthy. It is likely that Corona would need to have cash reserves in place to fund an upgrade to the next generation FTTH system and none of the above scenarios look to provide sufficient available capital to do so.

Annual bond payments would take a large portion of the available cash flow every year. Once the bond is paid off, this payment would go away and the annual cash flow increases significantly. As shown in the previous chart, the earliest time to Bond payoff is year 11 in the \$350 scenario.

12.6.6.1.1. Best Case Scenario Comparison

In order to analyze a higher market potential for an HFC network in Corona, Uptown ran a modeling scenario using the \$450 HFC as a base line but with increased market penetration for all product lines. This best-case scenario still accounts for a \$450 per home network construction cost but reflects the additional revenue associated with the higher penetration levels. A side-by-side comparison of these two scenarios is shown in Table 39.

⁴ The 10-year bond period starts in the third year of the plan. Therefore it would normally take 12 plan years to pay off the bond completely.

Table 39 – HFC Best Case Scenario Comparison

Measure	HFC Construction Scenarios (per meter passed)	
	\$450 Baseline	\$450 Best Case
Cost per mile of plant	\$55,285	\$55,285
Estimated Node Size	250	250
Actives Beyond Node ⁵	2	2
Bond Term	10	10
Bond Amount	\$26.4M	\$27.8M
Utility Cash Required	\$4.1M	\$2.7M
Total Funding Required	\$30.5M	\$30.5M
Years to Cash Positive	3	3
Years to Pay Off Bond	12	9
Cumulative Cash Year10	\$2.2M	\$15.3M
Bond Balance Year10	(\$6.4M)	(\$6.7M)
Net Cash Reserve Year10	(\$4.1M)	\$8.6M
Annual Cash Flow Year10	\$530K	\$2.8M
Annual Bond Payment	\$3.4M	\$3.6M

Table 40 – HFC \$450 Penetration Comparison

Measure	Market Penetration Levels	
	\$450 Baseline	\$450 Best Case
Residential Internet Year1	14%	20%
Residential Internet Year5	21%	30%
Residential Video Year1	14%	20%
Residential Video Year5	22%	30%
Commercial Internet Year1	15%	15%
Commercial Internet Year5	17%	25%

The major differences in cumulative cash, net cash and annual cash flow can be tied directly to the additional revenue from the higher number of customers while the net cash reserves allow for the possibly of a network upgrade to a FTTH system after 9 years. To help quantify the

⁵ This is the maximum number of actives from the fiber node to the last customer in a single leg of coax plant. Each fiber node has four coax ports, so the total number of actives “per” node is actually four times the number listed.

differences between the baseline and best-case scenarios, the market penetration differences between the two are listed in Table 40.

12.6.6.2.FTTH Results

As with the HFC analysis, Uptown has generated a FTTH best-case scenario to act as a comparative element to the overall analysis. With HFC it is easy to measure one construction method versus another in terms of costs per meter passed. This is not the case with a FTTH network. If the city selects the FTTH plan, Uptown will generate a much more detailed engineering analysis on the construction options. For the purposes of this analysis, Uptown has chosen a baseline FTTH plan to compare to the HFC alternatives. Additionally, as was done with HFC, a FTTH best-case scenario was generated. The two FTTH scenarios are compared in the chart below.

Table 41 – FTTH Baseline and Best Case Scenario Comparison

Measure	FTTH Network Plans	
	FTTH Baseline	FTTH Best Case
Bond Term	20	20
Bond Amount	\$46.2M	\$42.6M
Utility Cash Required	\$4.1M	\$3.1M
Total Funding Required	\$50.3M	\$45.7M
Years to Cash Positive	4	4
Years to Pay Off Bond	15	10
Cumulative Cash Year10	\$10.5M	\$38.7M
Bond Balance Year10	(\$32.8M)	(\$30.3M)
Net Cash Reserve Year10	(\$22.2M)	\$8.4M
Annual Cash Flow Year10	\$2.2K	\$6.6M
Annual Bond Payment	\$3.7M	\$3.4M

As with the HFC results, the major differences in cumulative cash, net cash and annual cash flow can be tied directly to the additional revenue from the higher number of customers. The bond requirements are quite high for both scenarios and the city is still required to contribute several million dollars of their own cash reserves for funding both. To help quantify the differences between the baseline and best-case scenarios, the market penetration differences between the two are listed in Table 42.

Table 42 – FTTH Penetration Comparison

Measure	Market Penetration Levels	
	FTTH Baseline	FTTH Best Case
Residential Internet Year1	14%	20%
Residential Internet Year5	21%	30%
Residential Video Year1	14%	20%
Residential Video Year5	22%	30%
Residential Phone Year1	16%	20%
Residential Phone Year5	25%	30%
Commercial Phone Year1	10%	10%
Commercial Phone Year5	23%	23%
Commercial Internet Year1	15%	15%
Commercial Internet Year5	17%	25%

12.6.6.3.Scenario Comparison

In order to better create a side-by-side comparison for all of the aforementioned network scenarios, Uptown has consolidated the four primary scenarios for the Corona business case:

- A baseline FTTH scenario based on penetration rates determined from the quantitative market research.
- A best case FTTH scenario based on higher market penetration rates.
- A baseline HFC scenario based on \$450 per home passed construction cost and penetration rates determined from the quantitative market research.
- A best case HFC scenario based on \$450 per home passed construction cost and higher market penetration rates.

Both FTTH scenarios include voice, video, and high-speed data offerings while the HFC scenarios only considers video and high-speed data. Other HFC scenarios with different price points per home passed were run and are included in the analysis for comparative purposes. Pricing for video and Internet services was based on levels approximately 10% below current incumbent offerings. The key outcomes from these scenarios are listed below.

Table 43 – FTTH and HFC Business Case Financial Overview

Outcome	FTTH Baseline	FTTH Best Case	HFC \$450 Baseline	HFC \$450 Best Case
Bond Term	20	20	10	10
Bond amount	\$46.2M	\$42.6M	\$26.4M	\$27.8M
Peak negative cumulative cash	\$77K	\$140K	\$91K	\$104K
Year annual cash goes positive	4	4	3	3
Year cumulative cash goes positive	12	8	11	8
Revenue Year 5	\$11.8M	\$16.1M	\$9.8M	\$13.2M
Years until Bond payoff	15	10	12	9
Cumulative Cash Year 10	(\$9.0M)	\$17.7M	\$210K	\$13.8M
Cumulative Cash Year 15	\$20.9M	\$73.1M	\$16.5M	\$43.6M

Both FTTH scenarios require very large upfront funding to complete the network construction but turn annual cash flow positive in year 4. The lower revenue and cash flow amounts for the HFC scenarios are a result of not offering any voice services. Also, it's quite clear that the best-case results for both FTTH and HFC show a distinct long-term improvement in cumulative revenue and cash flow.

12.6.7. Results Summaries

This section addresses the major financial elements of the FTTH Baseline business case. Uptown has deemed this scenario the most feasible for deployment and the best strategic method for a network providing retail residential and commercial telecommunications services.

12.6.7.1. Revenue, Expense and Operating Income

Operating income is the primary indicator of sustained profitability for a business. Revenue less total expense equals operating income. Revenues grow steadily as the network is built and subscribers are added from \$665K (Year1) to \$11.8M (Year5). Residential revenues make up over 96% of total revenues. Total revenue in Year15 is projected to be \$13.2M.

Expense growth is very similar to revenue growth with a few notable exceptions. Sales and marketing expenses are significant in the first three years of the case due to the high level of customer acquisition during the build-out phase. These costs come down in Year4 and Year5 and settle into a low growth pattern for the remainder of the plan. Cable programming expenses are expected to rise 1% each year of the plan. Total expense grows steadily from \$2.7M in Year1 to \$6.3M in Year5. Total expense in Year15 is projected to be \$7.0M.

Operating income goes positive by \$646K in Year2 and reaches \$5.5M by Year5. Revenue and expense are both expected to grow slowly over the remainder of the plan years. Operating income in Year15 is projected to be \$6.2M. Operating income after financing costs (including interest expense and interest income) also goes positive by \$1.1M in Year3. Interest earned on cash reserves boosts operating income after financing costs to \$6.0M by the end of the plan (Year15).

12.6.7.2.Capital

Telecommunications is a very capital-intensive business. Total capital required over the first five years of the plan is approximately \$48.8M. The three primary categories of capital are build-out capital, variable capital and engineering. Build-out capital includes the cost to construct the network and build the cable and Internet head end facilities. Build-out capital totals \$29.1M over the first five years. Variable capital includes subscriber equipment like cable modems and set top boxes and totals \$15.2M over the first five years. Finally, an engineering loading factor increases all capital equipment costs. This loading is intended to cover the cost of procuring, engineering and installing the given capital equipment. Engineering capital totals \$2.3M over the first five years.

12.6.7.3.Annual Cash Flow

Uptown used the following formula to calculate annual cash flow for the Corona telecommunications business case:

$$\begin{aligned}\text{Annual Cash Flow} &= (\text{Operating Income After Financing Costs}) \\ &\quad - (\text{Total Capital Expenditures}) \\ &\quad - (\text{Principal Bond Payments}) \\ &\quad + (\text{Cash from Bond Proceeds})\end{aligned}$$

As long as cash flow is negative, the business will require outside sources of funding staying afloat. When cash flow turns positive, the business can begin to replenish cash reserves, or pay down principal balances on borrowed monies. Annual cash flow is positive by \$3.6M in Year4, climbs to \$4.4M in Year5 and ends up at \$6.4M in Year15.

12.6.7.4.Cumulative Cash Flow

Cumulative cash flow is defined as the running total of annual cash flows over the course of the plan. Telecommunications projects of this nature typically have a very steep decline in cumulative cash flow during the build-out and growth stages. Then, if penetration projections prove to be correct, cumulative cash flow rises quickly to a break-even point (\$0) within a short period of time. Bond proceeds keep cumulative cash flow positive for the duration of the plan and as Corona's cash reserves grow over the course of the plan, their value reaches a cross over point with the outstanding bond balance in Year 9. The city could choose to pay off the bond using these cash reserves, or continue to make annual bond payments.

12.6.7.5.Sensitivity Analysis – Key Business Drivers

The Uptown business model is a complex web of independent variables and outcomes. Over 200 variables can be changed depending on the scenario being processed. Uptown has used its proprietary Ambassador decision support software to bring some definition to the task of sensitivity analysis for the Corona business case. Highlights of the sensitivity analysis for the FTTH Baseline scenario is outlined next.

Any model inputs are considered to be "sensitive" if the range of best to worst case for the given input has a material effect on an important outcome. The outcome chosen for this analysis is Cumulative Cash Year15 (with bond financing). The top five business drivers and their impact on Year15 Cumulative Cash are listed in Table 44 and discussed in the following sections.

Table 44 – Key Business Driver Overview

Variable	Variable Value			Cumulative Cash Year15		
	Worst	Median	Best	Worst	Median	Best
Res. Internet Access Final Penetration	15%	21%	25%	\$11.4M	\$23.9M	\$32.2M
Res. Internet Monthly Price Year1	\$36.00	\$40.00	\$44.00	\$17.7M	\$23.9M	\$30.9M
Blended Cost per Meter Passed Year1	\$700	\$650	\$500	\$21.2M	\$23.9M	\$32.5M
Res. Basic Cable Final Penetration	19%	22%	25%	\$18.4M	\$23.9M	\$28.9M
Expanded Basic Cable Monthly Price Year1	\$18.00	\$20.00	\$22.00	\$20.7M	\$23.9M	\$27.3M

12.6.7.5.1. Residential Internet Access Final Penetration

Internet access final penetration for consumers is the most sensitive variable in the FTTH Baseline scenario. Uptown assumed that Corona would not be able to attract more than 25% of the total residential market and the 15% number reflects an absolute worst-case scenario. As Table 44 shows, only achieving 15% would lower cumulative cash Year15 by over \$12M. Hitting the 25% penetration number improves the case by \$8.3M.

12.6.7.5.2. Residential Internet Monthly Price Year1

Uptown assumed that Corona would not be able to attract the projected number of subscribers with an average price higher than \$44.00 and the \$36.00 price point reflects an absolute worst case scenario. As Table 44 shows, dropping price to \$36.00 would lower cumulative cash Year15 by over \$6.2M. Raising price to \$44.00 improves the case by \$7M from the median, but it is unclear what the related impact on penetration might be. This points out the need for a significant investment in primary market research in the residential market for Internet service design and pricing.

12.6.7.5.3. Blended Cost per Meter Passed Year1

Uptown used budgetary pricing with results from past FTTH design efforts to derive the project outside plant costs to build a FTTH network in Corona. An average figure of \$650 per meter passed covers the materials and labor for all outside plant, field equipment and enclosures from the head end to every service pole or subscriber pedestal. This figure will vary depending on the amount of make ready work, directional boring, street cuts and whether work is completed using internal or contract crews. The variation shown in Table 44 can swing the case up or down by approximately \$11.3M. Corona can narrow the range of this variable after completing an engineering design and cost estimation project specifically for their network.

12.6.7.5.4. Residential Basic Cable Final Penetration

The residential basic cable final penetration was the fourth most sensitive variable in the FTTH Baseline scenario. Uptown estimated that 22% of the Corona market would sign up for basic cable services from the city. This figure is somewhat lower than the experiences of other municipal utilities that offer cable services throughout the country. AT&T Broadband will be a

tough competitor, so it is unlikely that the city could get penetration rates in excess of 25% and there is always the possibility that low adoption could result in penetration as low as 19%.

12.6.7.5.5. Expanded Basic Cable Monthly Price Year1

Uptown assumed that Corona would not be able to attract the projected number of subscribers with an average expanded basic cable monthly price higher than \$22.00 and the \$18.00 price point reflects an absolute worst case scenario. As Table 44 shows, dropping price to \$18.00 would lower cumulative cash Year15 by \$3.2M. Raising price to \$22.00 improves the case by \$3.4M from the median, but it is unclear what the related impact on penetration might be.

12.6.8. Risk Assessment

Uptown uses a Monte Carlo like analysis technique to quantify risk for business case scenarios. Uptown's application takes the top five most sensitive variables described in the previous section and runs the model for all possible combinations of the best, worst and most probable cases for each. With five variables and three possible values each, there are 243 total combinations to process.

The Cumulative Probability Distribution chart for the various scenarios is provided in the Appendix of this document. The following observations can be made from the chart:

- The expected value of Year15 Cumulative Cash is \$23.9M
- There is a 10% probability that Year15 Cumulative Cash will be less than \$10.2.
- There is a 10% probability that Year15 Cumulative Cash will be greater than \$38.1M.
- There is an 80% probability that Year15 Cumulative Cash will be less than \$38.1M and greater than \$10.2M.

The \$28M range of outcomes in the 80% probability interval is quite large. However, once Corona begins to narrow the range of the key business drivers, the 80% confidence interval will start to close. Uptown will rerun this analysis as more accurate estimates are acquired for the top five business drivers.

13. Recommendations

The purpose of this assessment was to develop a strategic roadmap for Corona's future telecommunications business efforts. After carefully considering the city's goals and objectives, the competitive environment, the city's strengths & weaknesses, business opportunities & threats and the financial impacts of different deployment strategies, Uptown recommends the following:

13.1. Install Microduct Infrastructure

Corona should begin installing microduct infrastructure as part of the traffic management system upgrade and all future electric utility construction. The city could place up to 24 microducts in the street that can take up to 12 fibers each, for a total of 288, on an as needed basis.

13.2. Pursue FTTH Business Case Further

The primary market research results from SDS show lower than expected penetration for residential and commercial services but lower construction costs for FTTH systems may make the project feasible in the long term. Corona might also benefit from the implementation of a FTTH network as they begin to construct the city-owned electrical system.

13.3. Do Not Pursue Product Resale Plans

Uptown cannot recommend the city pursue a product resale strategy for any telecommunications service.

13.4. Do Not Pursue Construction of an HFC System

As stated in the review of alternatives section, Uptown cannot recommend that Corona further pursue the HFC option. This network would not offer state of the art services while still coming at a considerable expense.

13.5. Do Not Construct a Local Telecom Exchange

There does not appear to be enough of a local demand for local exchange services to warrant the expense and resources associated with constructing a local telecom exchange in Corona.

13.6. Do Not Provide Fiber Based Services to Large Businesses

The small number of large businesses in the Corona market makes it difficult for Uptown to recommend this strategy.

14. Next Steps

Uptown recommends that Corona take the following steps to pursue the recommended strategy.

14.1. Pursue City Network Upgrade

Uptown recommends that Corona develop a detailed engineering plan for this project that includes equipment, installation, interconnection and fiber considerations.

14.2. Further Investigate Microduct Installation

The city should quickly identify any potential integration with existing traffic management and development projects.

14.3. Expand FTTH Business Case Analysis

Although much data is provided for this strategy, a more detailed engineering and cost analysis will be required to complete this recommendation.

15. Appendix

1. Residential and Commercial Survey Results
2. Business Interviews and Summary
3. Uptown FSN Business Model Results
4. Map of Optimal Fiber Route

CUSTOMER SATISFACTION SURVEY

FOR

CITY OF CORONA

RESIDENTIAL

JULY 2002

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

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CITY OF CORONA CUSTOMER SATISFACTION SURVEY

OVERVIEW

City of Corona contracted with Satisfaction Development Systems (SDS) in May 2002, through Uptown Services, to conduct a Market Research Survey consisting of 400 residential surveys.

SDS Tele-service agents completed 429 surveys. This total count comes from the number of respondents who answered question number one.

SDS provides reliable information representative of the total residential customer base. Our confidence interval exceeds 95 percent for most questions. In other words, City of Corona can be at least 95 percent confident that the results represent the attitude and opinion of all residential customers.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

REPORT FORMAT

This summary report analyzes the survey information question by question. It contains narrative commentary and percentage tables. Key questions include bar graphs. SDS adds customer comments when applicable.

Rounding: SDS rounds percentages to the nearest whole percent. Example: Certain sums show 99 or 101 percent.

Positive Index: "Positive" responses combine Good and Excellent percentages.

Sample Size: The number of customers responding varies from question to question without significantly affecting confidence intervals. Table percentages reflect total customers responding to each question.

Verbatim Comments: A customer ID number accompanies each comment. This "tagging" method allows readers to identify a single customer's remarks throughout the survey, while retaining customer anonymity when it is requested.

Appendices: Appendix A contains a complete listing of verbatim comments. Appendix B contains a copy of the Survey Questionnaire.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

EXECUTIVE SUMMARY

City of Corona can view the results of this survey with a very high level of reliability for potential residence customers. For most questions, the results exceed a 95 percent confidence factor when applied to the entire residential customer base. SDS certifies the accuracy of the data presented in this report. We believe the results will provide valuable data for market decisions.

Local Telephone- Just below one third of the residents living in the service rate their current provider as **Excellent**. This rating is 10 points below the 42 percent average for all local telephone companies SDS has measured. Over 9 in 10 respondents say their local service provider has all the options they need. When asked how satisfied they are with their current choices for local telephone service providers, less than 5 percent say they are **Unsatisfied**.

Long Distance- Nearly half of the respondents received their long distance from AT&T. Below one third rate their current provider as **Excellent**. Over 9 in 10 say their provider has all the options they need. When asked how satisfied they are with their current choices for long distance service providers, less than 5 percent say they are **Unsatisfied**.

Internet- Seventy percent of the respondents have Internet access in their home. Under a quarter of the respondents rate their current Internet service provider as **Excellent**. Forty percent of those with access get their service from AOL. Sixty percent of the respondents connect to the Internet via a **Dial-Up Modem**. Over 9 in 10 say their provider has all the options they need. When asked how satisfied they are with their current choices for Internet service providers, less than 10 percent say they are **Unsatisfied**.

Cable TV & Satellite Service- Just over 40 percent of the respondents subscribe to **Cable**. Just over a third of the respondents subscribe to **Satellite**. Only 18 percent of the subscribers rate their Cable service as **Excellent**. Over 40 percent of the Satellite subscribers rate their cable service as **Excellent**. Nearly 40 percent get their Cable service from AT&T. A quarter of the Satellite customers received service from **Dish Network**. When asked how satisfied they are with their current choices for Cable and Satellite Television, just over 10 percent say they are **Unsatisfied**.

Wireless- Sixty percent of the respondents subscribe to Wireless phone service. Forty percent get their service from **Verizon**. Just over a quarter rate their current provider as **Excellent**. Over 9 in 10 say their provider has all the options they need. When asked how satisfied they are with their current choices for Wireless phone service, distance service providers, less than 5 percent say they are **Unsatisfied**.

Switching to City of Corona- About a third of the respondents say they are either **Very Likely** or **Likely** to switch the following services: Local Dial Tone, Long Distance, Cable TV and Internet Service. The willingness to switch for Wireless phone service was slightly lower with just over a quarter saying they are **Very Likely** or **Likely** to switch. Nearly half say **Price** most influences their decision to switch.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. Overall, how do you rate the service you currently receive from your local (dial-tone) telephone company?

Positive Index		Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
383	90	135	32	248	58	35	8	11	3	429

If Poor, please explain: There were 9 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. Overall, how do you rate the service you currently receive from your local (dial-tone) telephone company?



CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q2. Does your local service provider have all the options you need?

Yes		No		Total
Count	%	Count	%	
397	95	19	5	416

Q3. What other options would you like to see your local provider offer? There were 12 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q4. How satisfied are you with the current local choices you have in telephone service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
128	31	266	65	17	4	411

If Unsatisfied, please explain: There were 14 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q5. What company currently provides your long distance telephone service?

AT&T		MCI WorldCom		Sprint		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
181	45	51	13	22	5	79	20	73	18	406

If Other, please explain: There were 79 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q6. Overall, how do you rate your long distance company?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
117	32	212	58	33	9	7	2	369

If Poor, please explain: There were 7 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q7. Does your long distance carrier have all the options you need?

Yes		No		Total
Count	%	Count	%	
354	96	14	4	368

Q8. What other options would you like to see your long distance company provide? There were 8 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q9. How satisfied are you with the current local choices you have in long distance service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
133	36	228	61	11	3	372

If Unsatisfied, please explain: There were 11 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q10. Are you connected to the Internet from your home?

Yes		No		Total
Count	%	Count	%	
284	70	124	30	408

Q11. Overall, how do you rate the service you currently receive from your Internet service provider?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
67	24	154	56	43	16	13	5	277

If Poor please explain: There were 13 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q12. What company provides your Internet service?

Earthlink		Pacific Bell		AOL		Charter		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	
24	9	16	6	112	40	5	2	96	34	26	9	279

If Other, please explain: There were 95 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q13. Which of the following methods do you use in connecting to the Internet?

Dial Up Modem		DSL		Cable		Wireless/Satellite		Other		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
165	60	54	20	46	17	5	2	4	2	274

If Other, please explain: There were 2 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q14. Does your Internet provider have all the options you need?

Yes		No		Total
Count	%	Count	%	
253	93	20	7	273

Q15. What other options would you like to see your Internet company provide? There were 17 comments provided. Please see the complete list of verbatim comments found in Appendix.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q16. How satisfied are you with the current local choices you have in Internet service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
86	31	166	60	23	8	275

If Unsatisfied, please explain: There were 21 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q17. Do you subscribe to either cable or satellite TV?

Cable		Satellite		Neither		Total
Count	%	Count	%	Count	%	
167	42	136	34	99	25	402

Q18. Overall, how do you rate your cable TV service?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
30	18	93	56	38	23	6	4	167

If Poor please explain: There were 4 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q19. Overall, how do you rate your satellite TV service?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
57	41	61	44	17	12	3	2	138

If Poor please explain: There were 3 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q20. What company currently provides your Cable or Satellite TV service?

AT&T		Direct TV		Dish Network		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
116	39	63	21	75	25	25	8	20	7	299

If Other, please explain: There were 22 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q21. What other channels or options would you like to see your Cable or Satellite Company provide? There were 102 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q22. How satisfied are you with the current local choices you have in cable and satellite service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
83	28	185	62	32	11	300

If Unsatisfied, please explain: There were 25 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q23. Do you subscribe to a wireless phone service for your personal use?

Yes		No		Total
Count	%	Count	%	
241	60	160	40	401

Q24. What company currently provides your non-business wireless telephone service?

AT&T		Pac Bell Wireless		Verizon		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
53	22	5	2	95	40	69	29	16	7	238

If Other, please explain: There were 67 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q25. Overall, how do you rate your wireless company?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
66	28	123	52	35	15	12	5	236

If **Poor** please explain: There were 12 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q26. Does your wireless provider have all the options you need?

Yes		No		Total
Count	%	Count	%	
222	94	15	6	237

Q27. What other options would you like to see your wireless company provide? There were 14 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q28. How satisfied are you with the current local choices you have in wireless service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
79	33	144	60	16	7	239

If Unsatisfied, please explain: There were 9 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q29. If you had a choice, how likely is it that you would purchase the following services from The City of Corona if the services were made available at rates comparable to what you currently pay?

	Very Likely		Likely		Not Likely		Not Sure		Total
	Count	%	Count	%	Count	%	Count	%	
Local Dial Tone	46	12	96	24	100	25	153	39	395
Long Distance	41	10	97	25	132	34	124	32	394
Cable TV	42	11	87	22	156	40	108	28	393
Internet Service	36	9	91	23	166	43	98	25	391
Wireless Phone	28	7	82	21	173	44	109	28	392

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q30. Which of the following most influences your decision to purchase telecommunications services?

Price		Service		Quality		Features		Reputation		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
177	49	64	18	72	20	17	5	32	9	362

Q31. Do you spend a significant amount of your workday at home (telecommuting)?

Yes		No		Total
Count	%	Count	%	
142	36	248	64	390

Q32. As I read the following age groups, please tell me which one you fit into.

18-25		26-30		31-40		
Count	%	Count	%	Count	%	
31	8	23	6	81	21	
41-50		51-60		Over 60		Refused
Count	%	Count	%	Count	%	Count %
105	27	57	15	80	20	16 4
						Total
						393

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q33. As I read the following income groups, please tell me which one represents your total annual household income.

Under 25K		25K - 45K		46K - 65K				
Count	%	Count	%	Count	%			
29	8	39	11	61	17			
66K - 85K		86K - 100K		Over 100K		Refused		
Count	%	Count	%	Count	%	Count	%	Total
42	12	22	6	25	7	136	38	354

Q34. How long have you lived in Corona?

Less Than 1 Year		1 - 5 Years		6 - 10 Years		Over 10 Years		Refused	
Count	%	Count	%	Count	%	Count	%	Count	%
15	4	73	19	72	18	226	57	9	2
									Total
									395

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

APPENDIX A • VERBATIM COMMENTS

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. Overall, how do you rate the service you currently receive from your local telephone company? If Poor, please explain:

- 1949 We have two lines and one is a business phone and it is on a different system, but doesn't work about half the time. The other phone line works fine, but not the business line. It is something new and doesn't work.
- 2260 They have lousy service.
- 2728 Too many calls come in with someone wanting to sell things and also a lot of calls coming in with no one on the line.
- 3338 Eric Cordova. (909)-340-0750. We have picked up the phone to make a call and found our neighbors talking on the phone line. Could the wires be crossed or why is their conversation bleeding over? Please contact us. [A]
- 3488 The local service is probably the worst I've ever had. It keeps cutting in and out.
- 3990 Terrible service.
- 4212 I think the company has too many hidden charges and too many taxes and fees.
- 4632 Never can get through to a real person.
- 5507 If you wanted to go on the Internet, it was a long distance call.

Q3. What other options would you like to see your local provider offer:

- 197 DSL.
- 925 Maybe Caller ID and Call Blocking would be good.
- 2281 Lower rates.
- 2353 Long distance.
- 2462 Long distance.
- 2676 One company doing all of it would be nice.
- 2722 I would like to have the option of a cell phone and long distance.
- 4078 I called asking about a second line for the computer. It's \$120 to install and then \$40 monthly.
- 4079 Don't have a choice.
- 4191 I would like DSL.
- 4803 DSL.
- 5838 You should not have to buy a new phone to have Caller ID.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q4. How satisfied are you with the current local choices you have in telephone service providers? If Unsatisfied, please explain:

- 244 There are no choices.
- 803 The service is kind of slow.
- 1383 They charged us a bill that was not ours, but they took care of it.
- 2259 It would be nice if we had some choices.
- 2260 Because of the poor service.
- 2580 It is always good to have a choice and I don't believe we have that.
- 3488 The local telephone service cuts out all the time.
- 3990 Be able to call out when I want too.
- 4079 No choices.
- 4091 Sometimes, I would like a choice.
- 5504 Lower rates.
- 5507 Everything is long distance and they do not have a local office. I have to call long distance to talk to them.
- 5731 They make the bill so complicated.
- 5838 It cost too much and I have no other choice.

Q5. What company currently provides your long distance telephone service? If Other, please explain:

- 8 We don't have a long distance service provider.
- 19 Verizon.
- 25 Ameritel.
- 97 Pacific Bell.
- 131 No long distance service.
- 135 Asian America.
- 185 Pacific Bell.
- 233 I don't have long distance.
- 244 I don't have long distance service.
- 268 I don't have long distance.
- 323 I don't long distance.
- 324 I have none.
- 327 We don't have long distance.
- 416 Excel.
- 498 Calling card.
- 499 Vartech.
- 703 Don't use long distance.
- 848 We don't use a long distance service.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q5. What company currently provides your long distance telephone service? If Other, please explain:

854 Vartech
858 10-10-220.
862 We don't have long distance.
951 10-10-811.
986 Pacific Bell
1063 Verizon.
1112 My daughter pays for this phone so I do not know who it is.
1383 Pacific Bell.
1503 Pacific Bell.
1504 AOL.
1768 IDT.
1940 Pacific Bell.
1989 Perfect Cents.
2260 I don't use long distance.
2311 We don't use one.
2332 Opex.
2353 I don't use one.
2370 Esterra.
2383 Vartech.
2434 Pacific Bell.
2442 Pacific Bell.
2506 Pacific Bell.
2519 Express Tel.
2544 Qwest.
2551 I don't use one.
2596 I don't use one.
2727 I use a 10-10 number.
2776 I use Verizon.
2824 I'm very happy with my services.
2846 I do not have a long distance service at this time.
3264 Pacific Bell.
3298 I use phone cards or 10-10 numbers.
3302 I do not use a long distance company. I use 10-10 numbers.
3338 We use our cell phone for long distance calls and don't have a provider.
3371 I have a long distance carrier based out of Ontario, Canada.
3488 We do not have long distance telephone service.
3523 Pacific Bell is my long distance telephone provider.
3607 Pacific Bell is my long distance provider.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q5. What company currently provides your long distance telephone service? If Other, please explain:

3739 Qwest.
3743 Pacific Bell.
3845 Allegiance.
3972 Calling cards.
3981 Calling cards or 10-10 numbers.
3990 IDT.
4624 Qwest.
4656 Pacific Bell.
4660 Life Line.
4666 AOL.
4678 Pac Bell.
4701 Verizon.
4716 MCI.
4832 Pacific Bell.
5106 MCI.
5504 Primus.
5507 Pacific Bell.
5588 Pacific Bell.
5596 Pac Bell.
5625 None.
5733 Pacific Bell.
5748 Pac Bell.
5803 None.

Q6. Overall, how do you rate your long distance company? If Poor, please explain:

2 They're too expensive.
197 They charge \$5.00 a month even if you don't use it, which I don't like.
282 They charge you when it's not even used.
1112 I really can't rate the long distance because I use it very little.
1387 They change the rates all the time and they keep going up.
2867 I don't use my long distance, so I can't answer the question.
3499 I do not have long distance service.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q8. What other options would you like to see your long distance company provide:

- 282 Just charge per call instead of having to pay a set fee and then fees per call.
- 416 SBC for the computer.
- 2259 I would like to see lower in-state rates.
- 2266 The time to call and what they offer is not reasonable for us.
- 2722 I would like to have long distance on the cell phone that works.
- 4079 Too many codes.
- 4091 More choices.
- 5106 In-state long distance.

Q9. How satisfied are you with the current local choices you have in long distance service providers? If Unsatisfied, please explain:

- 1 It just seems to cost too much when I call long distance.
- 19 I really wish that we had just one long distance service provider.
- 282 I don't trust any of them.
- 2353 I wish they had cheaper rates.
- 2596 Every time I sign up for something, they switch or change my service without prior notice. I don't use it that much anyway to be worth paying the service charge for it.
- 2722 I went on a trip and the cell phone would not work.
- 2785 Would like to have a local company so I could have everything on one statement.
- 3325 They offer all these deals and then never follow through with any of them.
- 4079 Sometimes I have to call three different numbers to get internal call connected.
- 4091 I would like choices.
- 5733 I have family in Chino and they are long distance as well as Ontario.

Q11. Overall, how do you rate the service you currently receive from your Internet service provider? If Poor, please explain:

- 40 I just don't care for them.
- 202 The service in general. I don't think I get the quality of service for the amount of money that I have to pay.
- 372 We had a little run in with them and we are not happy with them right now.
- 740 It never wants to get connected.
- 1132 The internet is very slow.
- 2481 It takes too long.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q11. Overall, how do you rate the service you currently receive from your Internet service provider? If Poor, please explain:

- 3338 Eric Cordova, (909)-340-0750. I would like to have a cable modem to dial my internet. Do you have this available in my area? Please contact me as soon as possible about this. [A]
- 3397 I have poor internet service.
- 4191 We have dial up and it disconnects a lot
- 4637 Keep getting bumped off.
- 4691 I keep getting knocked off.
- 5055 Everyone in Corona now has to use the same access number and it's too busy to get on.
- 5662 Their search engine is not great.

Q12. What company provides your Internet service? If Other, please explain:

- 1 AT&T broadband.
- 2 AT&T.
- 14 Net Zero.
- 55 Net Zero.
- 63 AT&T.
- 121 AT&T.
- 132 Direct DSL.
- 185 AT&T.
- 307 MSN.
- 327 Net Zero.
- 351 AT&T.
- 372 AT&T.
- 498 M-Star.
- 499 K-Mart.
- 586 Prodigy.
- 619 AT&T.
- 656 Broadband.
- 746 MSN.
- 925 Emeson
- 951 ISP.
- 984 Press Enterprise.
- 1127 AT&T.
- 1135 AT&T.
- 1488 MSN.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q12. What company provides your Internet service? If Other, please explain:

1496 AT&T.
1503 Charter.
1551 AT&T.
1597 Orange County on-line.
1718 MSN.
1725 AT&T.
1940 MSN.
1948 Prodigy.
1984 Prodigy.
2259 AT&T.
2277 CompuServe.
2283 MSN.
2332 AT&T.
2337 AT&T Broadband.
2370 AT&T.
2383 CompuServe.
2390 Net Zero.
2411 Prodigy.
2423 AT&T.
2429 Prodigy.
2431 Faith.
2441 AT&T.
2458 CompuServe.
2479 CompuServe.
2481 AT&T.
2520 CompuServe.
2522 Airis.
2555 AT&T.
2566 AT&T.
2580 AT&T.
2647 Sprint.
2648 AT&T.
2711 AT&T.
2776 AT&T.
3298 MSN.
3338 MSN.
3366 CompuServe.
3472 Net Zero.
3523 MCI.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q12. What company provides your Internet service? If Other, please explain:

3607 Two by Two.
3830 People PC.
3869 AT&T.
3889 MSN.
3943 AT&T.
3981 MSN.
4090 AT&T.
4112 AT&T.
4126 CompuServe.
4210 DSL.
4216 AT&T.
4620 AOL.
4624 AT&T.
4660 DSL.
4716 Net Zero.
4742 DSL.
4807 AT&T.
4823 CompuServe.
5132 Net Zero.
5504 CompuServe.
5612 AT&T.
5662 AT&T.
5739 AT&T.
5761 AT&T.
5799 AT&T.
5803 Juno.
5954 CompuServe.
5992 AT&T.
5995 AT&T.
6005 AT&T Broadband.
6057 Yahoo.
6076 CompuServe.

Q13. Which of the following methods do you use in connecting to the Internet? If Other, please explain:

3298 I don't have DSL. I have internet through the telephone line with Sprint.
3312 My children use the internet and I don't know what method is used.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q15. What other options would you like to see your Internet company provide:

- 8 Additional Email addresses.
- 121 I'd like to see them provide static IP addressing.
- 202 Clearer, faster service and shorter down time.
- 472 Add more than one line to the DSL modem.
- 848 Make it faster, it's too slow.
- 2259 We have to lease our cable modem. They won't let us buy it.
- 2260 A DSL line.
- 2332 Voice over IP and network of VPN.
- 2431 DSL.
- 3302 I would like to see lower rates for a T1, which is not available here.
- 3338 I would like cable modem to dial up the internet. I live in an apartment and wonder if it's available to me.
- 3397 It is too slow.
- 3706 Add more numbers so you can connect.
- 3739 Faster connection.
- 4112 Would like a choice.
- 4807 DSL.
- 4844 I want DSL.

Q16. How satisfied are you with the current local choices you have in Internet service provider? If Unsatisfied, please explain:

- 202 I have no other choices.
- 1132 They need to decrease the price of DSL, so that people can afford it.
- 2259 Because there is no competition. There are only a select few.
- 2277 Several months ago I couldn't log on. I tried to call their phone numbers and they all said they were disconnected. They had changed to another number and didn't tell their customers. I tried Sunday to log on for two hours and it was busy.
- 2332 I prefer cable over DSL and there is only one in my whole area and the service is not satisfactory. The equipment is faulty.
- 2411 I'm satisfied, but I wish we had more choices that are less expensive.
- 2481 I don't want my kids getting into all the dirty stuff and I don't want all of the stuff that keeps popping up on the computer. I'm seriously considering changing to PacX because it is family oriented.
- 2580 Choices are a good thing.
- 2594 I feel that there could be better service provided at a cheaper cost.
- 3325 The internet service is too slow.
- 3338 I can't get a cable modem. I have a dial up modem right now.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q16. How satisfied are you with the current local choices you have in Internet service provider? If Unsatisfied, please explain:

- 3397 I'm just not satisfied with my internet service. It is too slow and too expensive for what I receive.
- 3739 I don't really like the program.
- 4015 Connection time.
- 4678 There is a glitch somewhere.
- 4691 Because of being knocked off.
- 4807 Because the options I want aren't there.
- 4844 I want DSL.
- 5662 There needs to be more options.
- 5739 I asked for DSL from Earthlink and they never gave it to us. We either have cable or dial up.
- 5744 I have problems with the internet and they are all the same.

Q18. Overall, how do you rate your cable TV service? If Poor, please explain:

- 656 The service gets worse while the price steadily goes up. I'd like to see another cable company in the area.
- 2551 The programs are poor and I don't like the way they give it to us. You have to push this and push that and push something else before you can get it.
- 2623 They raised my price from \$35.00 to \$50.00 for just the basics.
- 3830 I hate the rate for what you get.

Q19. Overall, how do you rate your satellite TV service? If Poor, please explain:

- 1024 We are the only one in this neighborhood that has at least two interruptions a day with the cable TV.
- 2260 There is misrepresentation.
- 3743 Channel interruptions.

Q20. What company currently provides your cable or satellite TV service? If Other, please explain:

- 65 Broadband.
- 72 Motorola.
- 202 Charter.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q20. What company currently provides your cable or satellite TV service? If Other, please explain:

386 Adelphia.
578 Charter.
656 Earthlink.
1031 Broadband.
1135 Media One.
1147 Charter.
1503 Charter.
1569 Charter.
2423 Cox.
2431 Sky Angel.
2506 Media One.
2529 Charter.
2727 Adelphia.
2791 Charter.
2916 Media One.
3268 Charter.
3397 Charter.
3828 Com Point.
3991 Charter.
5210 Charter.
5761 Media One and AT&T.
5969 Charter.

Q21. What other channels or options would you like to see your cable or satellite company provide?

19 I just wish it was a little cheaper.
121 I'd like to see them have a multiple package where I have Internet and satellite TV in one simple package at a more affordable rate.
244 More for less of course.
291 More movie channels that you don't have to pay for.
351 More movie channels.
472 Internet access through satellite.
499 We're switching to satellite because cable has gotten too high.
538 When we first signed up for cable it was roughly \$10.00. It has since gone up to \$45.00 and that is too much.
619 We don't get the History channel, and we'd like that.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q21. What other channels or options would you like to see your cable or satellite company provide?

- 628 The repair number doesn't work.
- 725 More movie channels.
- 738 A community channel and a golf channel.
- 746 Take some dirty ones off.
- 854 I'd like to see them get better with their repair service.
- 914 I do not really like the channels I have on the satellite.
- 937 Maybe a package deal or at least a deal with local channels on the satellite TV without too much of a rate increase.
- 1024 I would like a movie package, but it wouldn't probably do any good when our TV is out half the time with interruptions.
- 1086 Maybe a country music channel would be good other than that, they have all the channels that I need.
- 1101 I have just seen other channels that I thought would be good to have.
- 1102 The community access channel should be moved to another channel because people usually do not see this channel where it is placed now.
- 1132 Better customer service with a phone number that you can call with problems all of the time.
- 1135 I would like to be able to get digital channels like I did on the satellite. They limit our digital on the cable and the reception is sometimes not good.
- 1748 CMT and Turner Classics.
- 1768 I would like to see more family network programs and a lot less smut.
- 1948 Crafting channels would be nice.
- 1956 I would like a package with more movies.
- 2259 I get the broadcasting stations only and I wish they would expand that a little. There is nothing in between that and a big package with everything.
- 2260 Fox Network 2 and I don't like the way the sports line up is set up. Everything is blacked out.
- 2266 We can't get the movie channel anymore unless we go to a digital service.
- 2311 They have more than we need.
- 2357 I would like to have local channels without having to pay extra for them.
- 2411 I like soap networks and more home improvement, garden and food channels. For the most part, I'm satisfied with what I have.
- 2423 More movie channels.
- 2429 The sports channels without the extra fees.
- 2431 More programming for children such as preteens.
- 2442 I would like to see them do the local channels.
- 2458 Women's entertainment and Sci-fi.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q21. What other channels or options would you like to see your cable or satellite company provide?

- 2519 CMT and Sci-fi.
- 2555 I would like ESPN News.
- 2594 They provide channels, but they always split them up into premium channels so to get what I specifically want, I have to pay an outrageous price. They are way over priced.
- 2598 I would like to see the Outdoor Life network.
- 2623 MTV2.
- 2647 I would like the local stations to be free.
- 2727 I would like more basic channels. The Travel and Soap channels.
- 2776 I have every channel I want, having both cable and satellite.
- 3736 History.
- 3770 More sports.
- 3918 Just less expensive for bigger packages.
- 4191 It seems that when the wind blows, the cable goes out, and no one fixes it.
- 4212 HBO.
- 4637 National Geographic.
- 4644 CMT.
- 4678 Lifetime, Sundance and Bravo.
- 4701 Some of the regular channels we used to get, but can't now.
- 4812 More selection.
- 4844 Sci-fi.
- 4847 More Discovery channels.
- 5106 More Sky Angel channels.
- 5230 Put back the channels they took away and add Turner Classic Movies.
- 5643 More Christian channels.
- 5697 Better rates.
- 5716 Better rates.
- 5731 More movie options for free.
- 5739 Better service.
- 5742 Free Playboy.
- 5799 Better rates.
- 5803 Get rid of the garbage.
- 5821 They show more old movies than new ones and then they run it twenty five times a month at least.
- 5992 I would like a gospel station.
- 6074 I would like to have Sci-fi.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q22. How satisfied are you with the current local choices you have in cable and satellite service providers? If Unsatisfied, please explain:

202 The rates are too high.
324 I'm not satisfied with the cable providers in the city.
365 I don't think there are any choices.
499 It's too high.
538 It costs too much.
578 It could be better for what I pay.
628 I'd like to see good clean and healthy programming for children, not so much sex and violence. Give us more of a choice for good fun entertainment.
1135 Because of the reception.
2260 There is no competition.
2509 They are only two choices.
2580 Again, it is always good to have choices.
2648 It would be nice if they had another choice.
2849 I think there should be competition for the satellite company.
3738 No choices.
3743 Sun spots.
3830 No options.
4812 No choices and it's expensive.
4844 Need more channels.
5219 The cable service stinks.
5230 There really isn't much of a choice for cable.
5662 We need more competition.
5716 We only have two choices.
5739 What choice, all of them have the same bad service for high rates.
5821 The best company would allow you to customize your plan.
6074 I need more choices.

Q24. What company currently provides your non-business wireless telephone service? If Other, please explain:

8 Cingular.
9 Cingular.
40 Nextel.
55 Cingular.
176 Cingular.
215 Cingular.
323 Sprint.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q24. What company currently provides your non-business wireless telephone service? If Other, please explain:

499	Sprint
725	Qwest.
854	Cingular.
861	Sprint.
916	Nextel.
984	Cingular.
1032	Sprint.
1063	Nextel.
1089	Cingular.
1096	Motorola.
1132	Cingular.
1135	Sprint.
1387	MCL.
1725	Cingular.
1779	Cingular.
1989	Cingular.
2259	Cingular.
2332	Cingular.
2358	SmartTel.
2370	Sprint.
2383	Prepaid phone service.
2390	Sprint.
2412	Nextel.
2429	Cingular.
2431	Cingular.
2441	Sprint.
2479	Nextel.
2506	Cingular.
2509	Sprint.
2529	Cingular.
2544	Cingular.
2598	Worldcom.
2697	Cingular.
2722	Sprint.
2727	Cingular.
2785	Cingular.
2865	Worldcom.
2867	Sprint.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q24. What company currently provides your non-business wireless telephone service? If Other, please explain:

2870 I use Cingular.
3298 Sprint.
3302 Cingular.
3751 Sprint.
3830 Cingular.
4078 Sprint.
4090 Cingular.
4191 Sprint.
4678 Cingular.
4742 Cingular.
4812 Cingular.
4823 Sprint.
4844 Cingular.
5055 Sprint.
5219 Sprint.
5230 Cingular.
5612 Cingular.
5625 Cingular.
5662 Sprint.
5748 Sprint.
5761 Nextel.
5995 Sprint.
6005 Cingular.

Q25. Overall, how do you rate your wireless company? If Poor, please explain:

176 We don't get any reception at our house and we are right in the middle of town.
984 Bad reception.
1063 Because I pay a very high rate for only a few minutes.
1725 Sometimes I can't get any service and my kids can't get a hold of me. I think they need a bigger tower. [AN]
1768 We were charged more then usual because we did not read the fine print.
1949 Our phone has been broken three times and we had to take it to a service center and it took a month to get it fixed so that it worked right.
2544 I have rotten reception in Corona.
2566 There are a lot of areas that I can't get coverage.
3990 We can't call when we want too.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q25. Overall, how do you rate your wireless company? If Poor, please explain:

- 4666 Too expensive.
- 4716 The phone never works.
- 5662 Dropped calls and incoming calls not going through.

Q27. What other options would you like to see your wireless company provide?

- 1 I would like to be able to push a button on my phone to find out how many minutes I have left to use on my phone.
- 499 We can't use it at our cabin in the mountains.
- 586 I'd like to be able to call out all the time, but I can't.
- 628 The 911 service is sometimes lacking.
- 738 Have the options available on home phones as with the wireless phone.
- 1063 I would like a lower rate package or one with more minutes at the same price that I pay now.
- 1132 I can't use the cellular phone in the house, but after I get down off the hill, then I have a good signal. They need to come up with a stronger power for the cell phones.
- 1725 Some more network options.
- 2594 I'm satisfied enough with the services I have that I would not change to another service, such as from the City of Corona unless the price was less than what I currently pay, but I'm not willing to sacrifice quality for price.
- 2722 In a remote area, such as I live in, my cell phone does not work.
- 3738 I just want a different service.
- 3804 I don't like the contract concept.
- 4091 I haven't had time to compare.
- 4764 Be able to get cell phones where I live.

Q28. How satisfied are you with the current local choices you have in wireless service providers? If Unsatisfied, please explain:

- 1725 I would like to have the service working when I need it.
- 2332 They are all the same. I think that no one has distinguishable features.
- 3842 High desert area means no coverage.
- 3990 Just don't have good cell service here.
- 4079 Just want to switch to same company my daughter has with more minutes, mobile to mobile option.
- 4091 Different plans for people and their pocket books.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q28. How satisfied are you with the current local choices you have in wireless service providers? If Unsatisfied, please explain:

4716 Because of the service.

5662 I would like to have a company that is more interested in serving the customer than collecting their money.

6074 I think that the contracts are unfair.

9

**RESIDENTIAL COMMUNICATION MARKET RESEARCH SURVEY
FOR
CITY OF CORONA**

RESIDENTIAL SURVEY**Opening Script**

Hello Mr./Ms. _____ I'm _____ calling for SDS, a research company, on behalf of The City of Corona. We've been asked to conduct a brief, confidential survey that will help the city better understand the state of communications needs in Corona. Let me assure you this is not a sales call. The survey takes only about 6 minutes to complete. Is now a convenient time, or should I call back later?

(Permission to go ahead - thank and proceed.)

(If not convenient say:)

Would it be better to call you later today or tomorrow? (Set appointment and follow up. Thank and close.)

- Q1. Overall, how do you rate the service you currently receive from your local (dial-tone) telephone company?

E G F P DK/CA

If Poor, please explain: _____

- Q2. Does your local service provider have all the options you need?

Y (Skip) N

- Q3. What other options would you like to see your local provider offer?

- Q4. How satisfied are you with the current local choices you have in telephone service providers?

VS S US

If US, please explain: _____

- Q5. What company currently provides your long distance telephone service? (NP)

AT&T

MCI Worldcom

Sprint

Other _____

DK/CA (SKIP)

Q6. Overall, how do you rate your long distance company?

E G F P DK/CA

If Poor, please explain: _____

Q7. Does your long distance carrier have all the options you need?

Y (Skip) N

Q8. What other options would you like to see your long distance company provide?

Q9. How satisfied are you with the current local choices you have in long distance service providers?

VS S US

If US, please explain: _____

Q10. Are you connected to the Internet from your home?

Y N (Skip)

Q11. Overall, how do you rate the service you currently receive from your Internet service provider?

E G F P DK/CA (Skip)

If Poor, please explain: _____

Q12. What company provides your Internet service? (NP)

Earthlink

Pacific Bell

AOL

Charter

Other _____

DK/CA (SKIP)

Q20. What company currently provides your Cable or Satellite TV service? (NP)

AT&T

Direct TV

Dish Network

Other _____

DK/CA (SKIP)

Q21. What other channels or options would you like to see your Cable or Satellite Company provide?

Q22. How satisfied are you with the current local choices you have in cable and satellite service providers?

VS S US

If US, please explain: _____

Q23. Do you subscribe to a wireless phone service for your personal use?

Y N (Skip)

Q24. What company currently provides your non-business wireless telephone service? (NP)

AT&T

Pac Bell Wireless

Verizon Wireless

Other _____

DK/CA (SKIP)

Q25. Overall, how do you rate your wireless company?

E G F P DK/CA

If Poor, please explain: _____

Q26. Does your wireless provider have all the options you need?

Y (Skip) N

Q27. What other options would you like to see your wireless company provide?

Q13. Which of the following methods do you use in connecting to the Internet?

Dial up Modem
DSL
Cable Modem
Wireless or Satellite
Other: _____

Q14. Does your Internet provider have all the options you need?

Y (Skip) N

Q15. What other options would you like to see your Internet company provide?

Q16. How satisfied are you with the current local choices you have in Internet service providers?

VS S US

If US, please explain: _____

Q17. Do you subscribe to either cable or satellite TV?

Cable
Satellite
Neither (Skip)

Ask Cable subscribers:

Q18. Overall, how do you rate your cable TV service?

E G F P DK/CA

If Poor, please explain: _____

Ask Satellite subscribers:

Q19. Overall, how do you rate your satellite TV service?

E G F P DK/CA

If Poor, please explain: _____

Q28. How satisfied are you with the current local choices you have in wireless service providers?

VS S US

If US, please explain: _____

Q29. If you had a choice, how likely is it that you would purchase the following services from The City of Corona if the services were made available at rates comparable to what you currently pay?

VL L NL Not Sure DK/CA

Local Dial Tone
Long Distance
Cable TV
Internet Service
Wireless Phone Service

Q30. Which of the following most influences your decision to purchase telecommunications services?

(Rotate reading selections with every survey)

Price
Service
Quality of the product
Number of features & options
Reputation

Q31. Do you spend a significant amount of your workday at home (telecommuting)?

Y N (Skip)

We are almost finished. I only have a couple of questions that will be used for classification purposes only. Again, your responses will be kept completely confidential.

Q32. As I read the following age groups, please tell me which one you fit into.

18 – 25 26 – 30 31 – 40 41 – 50 51 – 60 over 60

Q33. As I read the following income groups, please tell me which one represents your total annual household income.

Under 25K 25K - 45K 46K - 65K 66K to 85K 86 - 100K over 100K

Q34. How long have you lived in Corona? (NP)

less than 1 1 – 5 6 – 10 over 10

CUSTOMER SATISFACTION SURVEY

FOR

CITY OF CORONA

BUSINESS

JULY 2002

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

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CITY OF CORONA CUSTOMER SATISFACTION SURVEY

OVERVIEW

City of Corona contracted with Satisfaction Development Systems (SDS) in May 2002, through Uptown Services, to conduct a Market Research Survey consisting of 350 business surveys.

After making 3 documented attempts, SDS Tele-service agents were able to complete 337 surveys. This total count comes from the number of respondents who answered question number twenty-four.

SDS provides reliable information representative of the total business customer base. Our confidence interval exceeds 95 percent for most questions. In other words, City of Corona can be at least 95 percent confident that the results represent the attitude and opinion of all business customers.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

REPORT FORMAT

This summary report analyzes the survey information question by question. It contains narrative commentary and percentage tables. Key questions include bar graphs. SDS adds customer comments when applicable.

Rounding: SDS rounds percentages to the nearest whole percent. Example: Certain sums show 99 or 101 percent.

Positive Index: "Positive" responses combine Good and Excellent percentages.

Sample Size: The number of customers responding varies from question to question without significantly affecting confidence intervals. Table percentages reflect total customers responding to each question.

Verbatim Comments: A customer ID number accompanies each comment. This "tagging" method allows readers to identify a single customer's remarks throughout the survey, while retaining customer anonymity when it is requested.

Appendices: Appendix A contains a complete listing of verbatim comments. Appendix B contains a copy of the Survey Questionnaire.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

EXECUTIVE SUMMARY

City of Corona can view the results of this survey with a very high level of reliability for potential business customers. For most questions, the results exceed a 95 percent confidence factor when applied to the entire business customer base. SDS certifies the accuracy of the data presented in this report. We believe the results will provide valuable data for market decisions.

Local Telephone- Seventy percent of respondents receive their service from **Pacific Bell**. Just below one third of the businesses in the service area rate their current provider as **Excellent**. This rating more than 10 points below the 42 percent average for all local telephone companies SDS has measured. Over 9 in 10 respondents say their local service provider has all the options they need. When asked how satisfied they are with their current choices for local telephone service providers, only 1 percent say they are **Unsatisfied**.

Long Distance- Nearly forty percent received their long distance from AT&T. Forty percent also rate their current provider as **Excellent**. Nearly all respondents feel their provider has all the options they need. When asked how satisfied they are with their current choices for long distance service providers, less than 5 percent say they are **Unsatisfied**.

Internet- Nearly 40 percent of businesses **Don't Have** Internet access. Nearly a quarter of the respondents with access receive Internet service from a provider **Other** than those that were listed. The verbatim comments show trends toward certain companies. Over a quarter of the respondents rate their current Internet service provider as **Excellent**. About half of the respondents connect to the Internet via a **Dial-Up Modem**. Over 9 in 10 say their provider has all the options they need. When asked how satisfied they are with their current choices for Internet service providers, less than 10 percent say they are **Unsatisfied**.

Wireless- Half of the respondents subscribe to Wireless phone service. Over a third Wireless service from a provider **Other** than those that were listed. Forty percent rate their current provider as **Excellent**. Over 9 in 10 say their provider has all the options they need. When asked how satisfied they are with their current choices for Wireless phone service, distance service providers, less than 10 percent say they are **Unsatisfied**.

Switching to City of Corona- Business customers are show the most interest is switching Local Dial Tone with about a third of the respondents saying they are either **Very Likely** or **Likely** to switch. Just over a quarter are either **Very Likely** or **Likely** to switch Long Distance providers. Under a quarter are **Very Likely** or **Likely** to switch Internet Service or Wireless service. Half say **Price** most influences their decision to switch.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. What company currently provides your business's local (dial tone) telephone service?

GTE/ Verizon		Pacific Bell		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	
5	2	235	70	60	18	37	11	337

If Other, who: There were 60 comments provided. Please see the complete list of verbatim comments found in Appendix A.

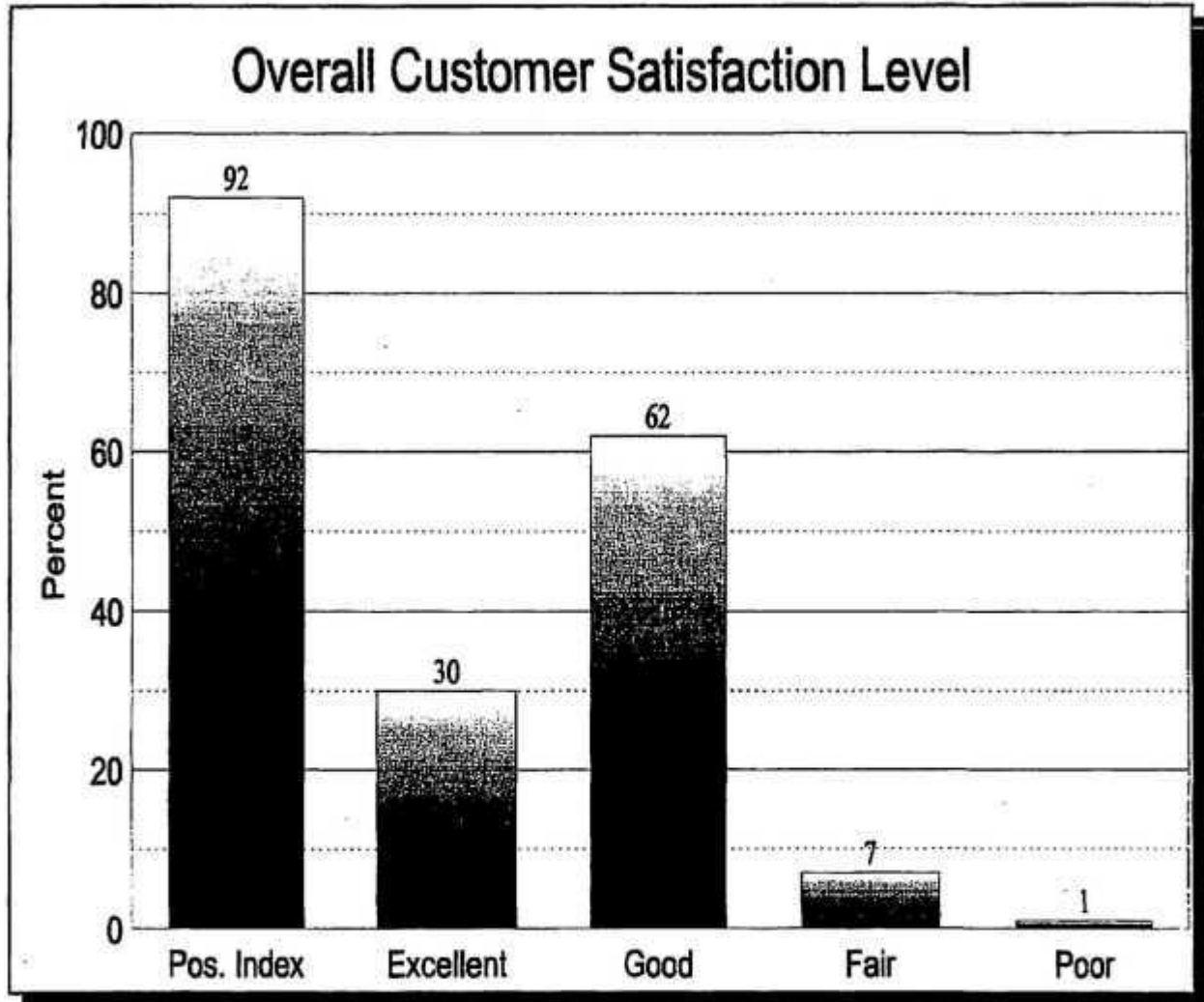
Q2. Overall, how do you rate the service you get from your local service provider?

Positive Index		Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
310	92	102	30	208	62	25	7	2	1	337

If Poor, please explain: There were 3 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q2. Overall, how do you rate the service you get from your local service provider?



CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q3. Does your local service provider have all the options you need?

Yes		No		Total
Count	%	Count	%	
325	97	10	3	335

Q4. What other options would you like to see your local provider offer? There were 6 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q5. How satisfied are you with the current local choices you have in telephone service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
117	35	215	64	3	1	335

If Unsatisfied, please explain: There were 3 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q6. What company currently provides your business's long distance service?

AT&T		MCI WorldCom		Sprint		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
122	37	41	12	20	6	62	19	89	27	334

If Other, please explain: There were 62 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q7. Overall, how do you rate your long distance company?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
124	40	174	56	13	4	2	1	313

If Poor, please explain: There were 4 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q8. Does your long distance carrier have all the options you need?

Yes		No		Total
Count	%	Count	%	
312	99	4	1	316

Q9. What other options would you like to see your long distance company provide? There were 2 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q10. How satisfied are you with the current local choices your company has in long distance service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
122	38	192	60	5	2	319

If Unsatisfied, please explain: There were 4 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q11. Does your business have a wireless or cellular service plan?

Yes		No		Total
Count	%	Count	%	
168	50	170	50	338

Q12. What company provides your wireless service?

AT&T		Pac Bell Wireless		Verizon Wireless		Other		Don't Know		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
44	27	9	5	36	22	57	34	20	12	166

If Other, please explain: There were 56 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q13. Overall how do you rate your wireless service?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
67	40	78	47	14	8	7	4	166

If **Poor**, please explain: There were 7 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q14. Does your wireless service provider have all the options your company needs?

Yes		No		Total
Count	%	Count	%	
161	96	6	4	167

Q15. What other options would you like to see your wireless provider offer? There were 2 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q16. How satisfied are you with the current local choices your company has in wireless service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
72	43	88	53	7	4	167

If **Unsatisfied**, please explain: There were 6 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q17. What company provides your business's Internet service?

Earthlink		Pacific Bell		AOL		AT&T		Other		Don't Have		Total
Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	
25	8	39	12	58	18	10	3	74	23	119	37	325

If **Other**, please explain: There were 70 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q18. Overall how do you rate your company's Internet service?

Excellent		Good		Fair		Poor		Total
Count	%	Count	%	Count	%	Count	%	
60	29	120	57	19	9	11	5	210

If **Poor** please explain: There were 12 comments provided. Please see the complete list of verbatim comments found in Appendix A.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q19. Which of the following methods do you use in connecting to the Internet?

Dial Up		DSL		Cable			
Count	%	Count	%	Count	%		
99	49	70	34	21	10		
Wireless/ Satellite		T1		T3/DS3		Other	
Count	%	Count	%	Count	%	Count	%
4	2	4	2	0	0	6	3
							Total
							204

If Other, please explain: There were 4 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q20. Does your Internet provider have all the options your company needs?

Yes		No	
Count	%	Count	%
205	97	6	3
			Total
			211

Q21. What other options would you like to see your Internet provider offer? There were 5 comments provided. Please see the complete list of verbatim comments found in Appendix.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q22. How satisfied are you with the current local choices your company has in Internet service providers?

Very Satisfied		Satisfied		Unsatisfied		Total
Count	%	Count	%	Count	%	
78	37	121	57	12	6	211

If Unsatisfied, please explain: There were 16 comments provided. Please see the complete list of verbatim comments found in Appendix A.

Q23. If you had a choice, how likely is it that your company would purchase the following services from The City of Corona if the services were made available at rates comparable to what your company currently pays?

	Very Likely		Likely		Not Likely		Not Sure		Total
	Count	%	Count	%	Count	%	Count	%	
Local Dial Tone	31	9	73	22	68	20	166	49	338
Long Distance	24	7	65	19	77	23	172	51	338
Internet Service	18	5	58	17	98	29	159	48	333
Wireless Phone	16	5	51	15	117	35	149	45	333

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q24. Which of the following most influences your company's decision when deciding to purchase telecommunications services?

Price		Service		Quality		Features		Reputation		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
170	50	94	28	44	13	8	2	23	7	339

Q25. As I read the following groups, please tell me which one represents your businesses gross annual revenue.

Under 500K		501K - 1M		1.1M - 3M		
Count	%	Count	%	Count	%	
69	23	40	13	25	8	
3.1M - 5M		5.1M - 10M		Over 10M		Refused
Count	%	Count	%	Count	%	
4	1	1	0	5	2	157 52
						Total
						301

Q26. How long have you been in business at your current location?

Less Than 1 Year		1 - 5 Years		6 - 10 Years		Over 10 Years		Refused		Total
Count	%	Count	%	Count	%	Count	%	Count	%	
12	4	56	17	86	26	162	49	18	5	334

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

APPENDIX A • VERBATIM COMMENTS

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. What company currently provides your business's local (dial tone) telephone service? If Other, who:

24	AT&T.
64	MPower.
79	MPower.
190	AT&T.
193	MCI.
225	AT&T.
235	AT&T.
252	MPower.
390	MCI.
424	AT&T
442	MCI.
650	Allegiance.
667	MPower.
687	AT&T.
711	SPC.
887	AT&T.
901	I think its Pacific Bell.
1123	MCI.
1345	Qwest.
1351	Allegiance.
1374	Allegiance.
1432	MPower.
1525	MPower.
1597	AT&T.
1623	It was Pacific Bell, but we just switched to BC something.
1720	Allegiance.
1818	Allegiance.
1893	Sprint.
1971	AT&T.
1980	AT&T.
1987	Southern Bell.
2019	Worldcom.
2066	MPower.
2082	MCI.
2093	Allegiance.
2175	Allegiance.
2201	Allegiance.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q1. What company currently provides your business's local (dial tone) telephone service? If Other, who:

2261 MPower.
2300 MPower.
2436 Affinity Network.
2511 AT&T.
2994 MCL.
3475 AT&T.
3488 MPower.
3532 AT&T.
3566 SBC.
3568 SBC.
3785 MPower.
3978 MPower.
3993 MPower.
4015 AT&T.
4047 MPower.
4162 AT&T.
4185 Allegiance.
4213 AT&T.
4387 AT&T.
4413 MPower.
4421 Allusion.
4461 Allegiance.
4463 Pacific Bell.

Q2. Overall, how do you rate the service you get from your local service provider? If Poor, please explain:

901 We do not make any long distance phone calls from here so we do not need or have a long distance carrier that I know of.
2310 The service is poor and the price is high.
3232 I feel that it is very over priced and we are in the process of switching.

Q4. What other options would you like to see your local provider offer?

898 Better phone service. We have a problem with the lines and the phone company says it is our phone line, but we have had them checked and it's not ours.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q4. What other options would you like to see your local provider offer?

- 1373 Cell phones.
- 1751 Not enough service options.
- 1987 I would just like to say that if the City of Corona offered telecommunication services at comparable rates and service to what we are currently receiving, that we'd be awfully dumb not to support our own city.
- 2220 If someone else were to offer comparable rates for all of our calling, we might be interested, but if it were only for the Corona area, we probably wouldn't change.
- 2994 DSL.

Q5. How satisfied are you with the current local choices your company has in local telephone service providers? If Unsatisfied, please explain:

- 2168 They are high. If the city can do a better job and reduce the rates, I'd say go for it. I probably wouldn't be interested in changing to the city if the rates remained the same, but if they were lower, I'd probably change.
- 2310 For the amount we pay, we don't get the service anymore. I'm unhappy with both the price and service.
- 3107 Not really a lot of choices.

Q6. What company currently provides your business's long distance service? If Other, who:

- 29 Excel.
- 64 MPower.
- 79 MPower.
- 94 Qwest.
- 96 Pacific Bell.
- 160 Pacific Bell.
- 165 Pacific Bell.
- 245 Pacific Bell.
- 330 Vartech
- 596 It's GE.
- 650 Allegiance.
- 797 Pac Bell.
- 899 Pacific Bell.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q6. What company currently provides your business's long distance service? If Other, who:

901 We do not have or need a long distance carrier at this time.
1312 Pac Bell.
1316 Verizon.
1345 Qwest.
1374 Allegiance.
1432 MPower.
1506 Zone.
1525 MPower.
1720 Allegiance.
1800 Pacific Bell.
1907 Our customers are from within a five-mile radius so we don't use long distance service because we don't need it.
1959 Sprint.
1968 10-10 number.
1980 MPower.
1983 Pac Bell.
1987 MCI.
2013 We don't have a long distance carrier.
2066 MPower.
2067 MPower.
2082 Verizon.
2093 Alliance.
2178 GE Business Solutions.
2185 Broad Wing.
2218 Pacific Bell.
2238 Verizon.
2261 MPower.
2300 MPower.
2310 Qwest.
2451 We don't use one.
2455 MPower.
2484 Pacific Bell.
2591 Vartech.
2822 10-10 codes or calling cards.
3126 Pacific Bell.
3174 Empire.
3488 MPower.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q6. What company currently provides your business's long distance service? If Other, who:

- 3493 Don't have long distance service.
- 3513 Internet Communications.
- 3566 No long distance service.
- 3574 Nextel.
- 3575 Qwest.
- 3578 Do not have long distance service.
- 3785 MPower.
- 3831 Cable and Wireless.
- 3978 MPower.
- 3989 Alliance.
- 3993 MPower.
- 4047 MPower.
- 4461 Alliance.

Q7. Overall, how do you rate your long distance company? If Poor, please explain:

- 929 We get daily calls from companies that want us to change to their company for telephone service. I wish there was a way to stop this.
- 1683 I'm really tired of all the taxes they keep adding onto the long distance and no one can tell you the reasoning behind it.
- 2093 We really haven't used or been with Alliance for very long, so I really can't rate how they are overall as a company.
- 3574 Every month it seems like they mess up on the bill.

Q9. What other options would you like to see your long distance carrier offer?

- 2185 I would like to have easier access for making long distance calls. It is sometimes hard to get through and you need an operator to help with the long distance calls.
- 2201 I rarely use long distance service.

Q10. How satisfied are you with the current local choices your company has in long distance providers? If Unsatisfied, please explain:

- 2159 The rates are too high.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q10. How satisfied are you with the current local choices your company has in long distance providers? If Unsatisfied, please explain:

- 2287 I don't get any service and they lied to me. I was supposed to get a certain rate and I don't. I can't get a hold of the sales person to get help.
4185 There are not enough good international plans. We get disconnected a lot.
4457 It is too expensive and they charge a monthly rate.

Q12. What company provides your wireless service? If Other, who:

- 79 Multicom.
120 Sprint.
160 Nextel.
212 Cingular.
235 Motorola.
344 Nextel.
442 Norco.
456 Nextel.
561 Cingular.
596 L.A. Cellular.
650 Cingular.
688 Nextel.
711 Nextel.
735 Nextel.
797 Cingular.
834 Nextel.
965 Nextel.
1236 Worldcom.
1312 Nextel.
1345 Nextel.
1351 Cingular.
1373 Nextel.
1374 Nextel.
1907 Nextel.
1958 Cingular.
1959 Nextel.
1971 Nextel.
2019 Sprint.
2053 Nextel.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q12. What company provides your wireless service? If Other, who:

2082 Nextel.
2274 Nextel.
2275 Cingular.
2315 Nextel.
2384 Nextel.
2438 Cingular.
2443 Nextel.
2453 Sprint.
2455 Sprint.
2512 Sprint.
2531 Sprint.
2727 Cingular Wireless.
2799 Cingular Wireless.
2994 Nextel.
3107 Sprint.
3475 Nextel.
3532 Nextel.
3538 Nextel.
3822 Sprint.
3896 Sprint.
3924 Sprint.
3993 Nextel.
4117 Sprint.
4170 Nextel.
4423 Sprint.
4441 Sprint.
4502 Nextel.

Q13. Overall, how do you rate your wireless service? If Poor, please explain:

120 Can't talk to a human being unless you are late on a bill.
344 They don't have enough towers. We have really poor reception just two miles away.
1971 The physical service and the phone are poor.
2013 They drop our service. They don't offer much for coverage or range. I can be calling locally in Corona and the call is dropped.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q13. Overall, how do you rate your wireless service? If Poor, please explain:

- 2168 The service is poor.
- 2274 The equipment they have given us to use is junk.
- 3107 Doesn't work in the Corona area.

Q15. What other options would you like to see your wireless provider offer?

- 120 A human contact.
- 344 Better reception.

Q16. How satisfied are you with the current local choices your company has in wireless service providers? If Unsatisfied, please explain:

- 1944 Our cell service is poor.
- 1971 We have to use radio cellular service. We have to use Nextel because there is no competitor. The phones are of poor quality and the guys just have too many problems with the service.
- 2168 They are too expensive.
- 2274 I have never liked any of them.
- 3978 AT&T is the only company that works locally in Corona.
- 4500 I think they need to monitor our service.

Q17. What company provides your business's Internet service? If Other, who:

- 24 We have our own.
- 38 CNM Network.
- 64 MPower.
- 79 MPower.
- 193 Compuserve.
- 225 Compuserve.
- 352 I don't know.
- 373 I'm not sure.
- 382 I don't know.
- 429 We have a land connection.
- 442 Norco.
- 459 I don't know.
- 472 MSN.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q17. What company provides your business's Internet service? If Other, who:

483 I don't know.
596 We have DSL.
618 I don't know.
625 I don't know.
650 Creative Web.
687 Covad.
688 GTE.
711 Nemesis.
887 I'm not sure.
1009 MSN.
1124 UIA.
1175 Discover.
1193 PC.
1351 CompuServe.
1373 I don't know.
1374 Megapath.
1623 Sprint.
1624 Sprint.
1703 I don't recall who it was.
1715 Sprint.
1893 Sprint.
1935 I don't know.
1983 MSN.
2039 I don't know, corporate office decides that.
2062 I don't know.
2066 We use AOL and AT&T, but not broadband.
2082 Internet Explorer.
2168 AOL and DSL is with Pac Bell. The DSL is too expensive.
2218 I'm not sure.
2266 SPC.
2274 St. Louis something. I'm not really sure.
2287 Atlas Business Communications.
2312 I don't know and I don't use the service.
2455 MSN.
2512 MSN.
2531 Web TV.
2799 I do not know.
3126 I'm not sure.
3132 I don't know.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q17. What company provides your business's Internet service? If Other, who:

3166 I believe it is MSN.
3174 MPower.
3266 I'm not sure, it is all done through a corporate office.
3532 I don't know.
3538 I don't know.
3568 SBC.
3785 PPE Net.
3846 XO Communications.
3873 I don't know.
3896 Compuserve.
3978 SBC Global.
3989 Alliance.
3993 MPower.
4015 I don't know, provided by corporate office.
4170 UIA.
4233 Netscape.
4457 Project.
4461 DSL Extreme.

Q18. Overall, how do you rate your companies' Internet service? If Poor, please explain:

456 They split my screens without letting me know and now they're in the process of fixing it.
1009 We can't get the help that we ask for and they send Email's to MSN when we do.
1893 The internet is always going down. It is disconnecting or we can't use it about once or twice a week. It is also very slow.
1944 It is slower than molasses.
2052 When we were getting DSL, it took forever.
2178 It is slow and when I've had problems with my Email, I get no technical support.
2443 It is very slow and it won't let me go to a lot of the sites I want.
2455 It is way too slow and we can't access sites that we need to get onto.
2727 AOL is too slow and when I'm on with a customer, I get kicked off line.
3232 The DSL is very poor.
3831 It's too slow.
4457 I've had a lot of trouble with the company.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q19. Which of the following methods do you use to connect to the Internet at this location? If Other, what:

- 965 Network system.
- 1959 I don't know.
- 2727 I don't know which method, but I'm in the process of switching to DSL.
- 4457 Prodigy.

Q21. What other options would you like to see your Internet provider offer?

- 625 It needs to be faster.
- 688 They have other options, but we just can't get them here.
- 1009 I would like to get true service.
- 2455 We would like DSL.
- 2994 DSL.

Q22. How satisfied are you with the current local choices your company has in Internet service providers? If Unsatisfied, please explain:

- 625 The speed is too slow so I can't download everything I'd like.
- 1009 We can't get DSL.
- 1893 Because of the disconnections and slowness of the internet, I'm not very satisfied. Sometimes, you can't even connect.
- 1944 The service of the internet is just too slow.
- 1983 Our company office probably wouldn't be interested in having services from the city of Corona because they get the same company for all offices and we only have two offices in the city of Corona.
- 2076 We would likely look into having our services from the city of Corona, but our business will soon be moving to Temecula. I'm sure that we'll be moving so we wouldn't be able to deal with the City of Corona.
- 2168 The DSL is very expensive.
- 2169 I'd have to know more about the city offering telephone services before I'd consider changing to them. So for now, I'm not sure if I'd be interested in changing.
- 2436 It doesn't always work and we are looking to change.
- 2455 There aren't very many options.
- 2727 AOL is too busy and when I'm on with a customer and get kicked off. I could lose the customer.
- 2994 Can't seem to get DSL.

CITY OF CORONA CUSTOMER SATISFACTION SURVEY

Q22. How satisfied are you with the current local choices your company has in Internet service providers? If Unsatisfied, please explain:

- 3862 I want better and faster service.
- 4015 Don't have complete access, limited by the corporate office.
- 4490 I would be very interested in trying your telephone service. I think you should just advertize what you have and how much it costs.
- 4519 I hope that the City of Corona will start a telephone service and tell them to contact me. [AN]

City of Corona Commercial Telecom Usage Survey Results

Company Name	Fender Guitar Museum	Dart Container	Kaiser Permanente	Western Homes	Uniweb	School District
Contact	Brian Goodright	Clint Quadrozzi	Maria Kinney	Jim Thomas	John McDougall	Rosalee Aja
Title	IT Manager	IS Manager	Project Manager	Controller	VP	Dir of Purchasing
Phone Number	480-686-7193	909-735-8115	909-736-8508	909-734-6610		909-736-5051

Local phone service

1 Service provider	PacBell	PacBell	PacBell	PacBell	PacBell	PacBell
2 Service rating (E,G,F,P, DK/CA)	E	F	E	G	E	E
3 Provider options (Y/N)	Y	Y	Y	Y	Y	Y
4 Other options needed	-	Better reliability/Less repairs	-	More reliability	-	-
5 How satisfied (VS,S,US)	S	S	S	S	VS	S

Long distance service

6 Service provider	WorldCom	AT&T	MCI	Allegiance	AT&T	MCI
7 Service rating (E,G,F,P, DK/CA)	G	G	G	G	E	G
8 Provider options (Y/N)	Y	Y	Y	Y	Y	Y
9 Other options needed	-	-	-	None	-	-
10 How satisfied (VS,S,US)	S	S	S	VS	VS	S

Wireless service

11 Corporate plan? (Y/N)	N	N	Y	N	Y	Y
12 Service provider			Verizon		AT&T	Verizon
13 Service rating (E,G,F,P, DK/CA)			G		E	G
14 Provider options (Y/N)			Y		Y	Y
15 Other options needed			-		-	-
16 How satisfied (VS,S,US)			S		VS	S

Internet service

17 Service provider	Extreme Zone	Proxy to Corporate	Corporate	Sprint	PacBell	Meshworks
18 Service rating (E,G,F,P, DK/CA)	G			G	F	E
19 Connection method	T1			T1	DSL	35 T1's
20 Provider options (Y/N)	Y			Y	N	Y
21 Other options needed	-			None	More service choices	-
22 How satisfied (VS,S,US)	S			S	S	VS

General questions

23 Likelihood to purchase services from City						
Local phone (VL,L,NL,Not Sure,DK/CA)	NS	NL	NL	NS	NS	NS
LD (VL,L,NL,Not Sure,DK/CA)	NL	NL	NL	NS	NS	NS
Wireless (VL,L,NL,Not Sure,DK/CA)	NL	NL	NL	NL	NS	NS
Internet (VL,L,NL,Not Sure,DK/CA)	L	NL	NL	NS	NS	NS
24 Telecom service influences	Service & Quality	Price & Features	Features	Cost	Services then cost	Cost
25 Gross annual revenue	10M+	10M+	10M+	over \$10M	Couldn't disclose	NA
26 Time in current location	6-10 yrs	over 10 yrs	over 10 yrs	over 10 years	1-5 years	over 10 years

General Notes	Many telecom decisions dictated by corporate in AZ. Brian is located at corp office.	Most telecom decisions are dictated by corporate policy. Little or no local decision making abilities.	This is a call center with about 350 employees. Very heavy LD usage. Corporate telephony group is based in Pasadena and makes the decisions.	Corp office in MI handles Internet service and is currently evaluating a national cellular plan. Primarily a manufacturing site with low telecom needs.	Heavy discounting keeps all rates extremely low (60-70% below list) but would consider any provider that would save the district \$.
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City of Corona – Commercial Telecom Survey

Company Name: _____

Your Name: _____

Title: _____

Local Phone Service

Q1. What company currently provides your business's local (dial tone) telephone service?

GTE/Verizon Pacific Bell Other: _____

Q2. Overall, how do you rate the service you get from your local service provider?

Excellent Good Fair Poor Don't Know

If Poor, please explain: _____

Q3. Does your local service provider have all the options your company needs?

Yes (Skip to Q5) No

Q4. What other options would you like to see your local provider offer?

Q5. How satisfied are you with the current local choices your company has in local telephone service providers?

Very Satisfied Satisfied Unsatisfied

If unsatisfied, please explain: _____

Long Distance Phone Service

Q6. What company currently provides your business's long distance service?

AT&T MCI/WorldCom Sprint Other: _____ Don't Know

Q7. Overall, how do you rate your long distance company?

Excellent Good Fair Poor Don't Know

If Poor, please explain: _____

Q8. Does your long distance carrier have all the options your company needs?

Yes (Skip to Q10) No

Q9. What other options would you like to see your long distance carrier offer?

Q10. How satisfied are you with the current local choices your company has in long distance service providers?

Very Satisfied

Satisfied

Unsatisfied

If unsatisfied, please explain: _____

Wireless Phone Service

Q11. Does your business have a wireless or cellular service plan?

Yes

No (Skip to Q17)

Q12. What company provides your wireless service?

AT&T

PacBell

Verizon

Other: _____

Don't Know

Q13. Overall how do you rate your wireless service?

Excellent

Good

Fair

Poor

Don't Know

If Poor, please explain: _____

Q14. Does your wireless service provider have all the options your company needs?

Yes (Skip to Q16) No

Q15. What other options would you like to see your wireless provider offer?

Q16. How satisfied are you with the current local choices your company has in wireless service providers?

Very Satisfied

Satisfied

Unsatisfied

If unsatisfied, please explain: _____

Internet Service

Q17. What company provides your business's Internet service? (NP)

Earthlink Pac Bell AOL AT&T Other: _____ None (Skip to Q23)

Q18. Overall how do you rate your company's Internet service?

Excellent Good Fair Poor Don't Know

If Poor, please explain: _____

Q19. Which of the following methods do you use to connect to the Internet at this location?

Dial-Up DSL Cable Modem Wireless/Satellite T1 T3/DS3

Q20. Does your Internet provider have all the options your company needs?

Yes (Skip to Q22) No

Q21. What other options would you like to see your Internet provider offer?

Q22. How satisfied are you with the current local choices your company has in Internet service providers?

Very Satisfied Satisfied Unsatisfied

If unsatisfied, please explain: _____

Summary Questions

Q23. If you had a choice, how likely is it that your company would purchase the following services from The City of Corona if the services were made available at rates comparable to what your company currently pays?

	Very Likely	Likely	Not Likely	Not Sure	Don't Know
Local Phone Service					
Long Distance					
Internet Service					
Wireless Phone Service					

Q24. Which of the following most influences your company's decision when deciding to purchase telecommunications services?

Price Service Quality Number of Features & Options Reputation

Q25. As I read the following groups, please tell me which one represents your businesses gross annual revenue.

Under \$500K \$501K-\$1M \$1.1M-\$3M \$3.1M-\$5M \$5.1M-\$10M \$10M+

Q26. How long have you been in business at your current location?

Less than 1 year 1-5 years 6-10 years over 10 years

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
2	Assumptions									
3										
4	Meter Statistics									
5	Residential Meter Growth		1.0%	1.0%	1.0%	1.0%	1.0%	0.5%	0.5%	0.5%
6	Residential Meters	40,615	41,021	41,436	41,846	42,254	42,657	43,058	43,458	44,226
7	Commercial Meter Growth		0.5%	0.5%	0.5%	0.5%	0.5%	0.3%	0.3%	0.3%
8	Commercial Meters	2,500	2,513	2,525	2,538	2,550	2,557	2,569	2,589	2,615
9										
10	Residential Penetrations									
11	Basic Telephone	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
12	Custom Calling	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
13	Long Distance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
14	Internet Access	14.0%	16.3%	19.4%	20.5%	21.0%	21.0%	21.0%	21.0%	21.0%
15	Basic Cable	14.0%	16.7%	20.2%	21.4%	22.0%	22.0%	22.0%	22.0%	22.0%
16	Expanded Basic Cable % of Basic	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%
17	Digital Cable % of Basic	25.0%	33.3%	44.4%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%
18										
19	Premium Services									
20	Premium Services Growth		3.0%	3.2%	3.1%	3.0%	3.0%			
21	HBO	30.0%	30.9%	31.5%	31.8%	32.2%	32.2%	32.2%	32.2%	32.2%
22	Showtime	15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%	16.1%
23	Cinemax	15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%	16.1%
24	Starz	15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%	16.1%
25										
26	Pay Per View Programming (PPV)									
27	Addressable Penetration	28%	37%	49%	53%	55%	55%	55%	55%	55%
28	Movies	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
29	Events	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
30	Adult	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
31										
32	Equipment Rental									
33	Analog Set Top Box (STB)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
34	Analog Remote Controls	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
35	Digital STBs	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%
36	Digital Remote Controls	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%
37										
38	Commercial Penetrations									
39	Basic Telephone	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
40	Custom Calling	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
41	Long Distance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
42	Internet Access	15.0%	15.5%	16.0%	16.5%	17.0%	17.0%	17.0%	17.0%	17.0%
43										
44	Annual Churn by Market Segment									
45	Residential Churn	20.0%	18.8%	17.5%	16.3%	15.0%	15.0%	15.0%	15.0%	15.0%
46	Business Churn	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
47										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
48	Install Prices by Service									
49	Telephone		\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00
50	Internet Access		\$50.00	\$43.75	\$37.50	\$31.25	\$25.00	\$25.00	\$25.00	\$25.00
51	Cable		\$0.00	\$6.25	\$12.50	\$18.75	\$25.00	\$25.00	\$25.00	\$25.00
52										
53	Monthly Prices - Cable									
54	Annual Rate Increase		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
55	Basic Cable		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
56	Expanded Basic Cable		\$20.00	\$20.20	\$20.40	\$20.61	\$20.81	\$21.02	\$22.09	\$22.99
57	Digital Cable		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
58	HBO		\$9.00	\$9.09	\$9.18	\$9.27	\$9.37	\$9.46	\$9.94	\$10.35
59	Showtime		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
60	Cinemax		\$7.00	\$7.07	\$7.14	\$7.21	\$7.28	\$7.36	\$7.73	\$8.05
61	Starz		\$8.00	\$8.08	\$8.16	\$8.24	\$8.32	\$8.41	\$8.84	\$9.20
62										
63	PPV Net Revenue per Buy									
64	Annual rate increase			1.0%	1.0%	1.0%	1.0%			
65	PPV - Movies		\$2.50	\$2.53	\$2.55	\$2.58	\$2.60	\$2.60	\$2.60	\$2.60
66	PPV - Events		\$15.00	\$15.15	\$15.30	\$15.45	\$15.61	\$15.61	\$15.61	\$15.61
67	PPV - Adult		\$6.00	\$6.06	\$6.12	\$6.18	\$6.24	\$6.24	\$6.24	\$6.24
68										
69	Monthly Prices Telephone and Internet									
70	Service Price Decline		0.0%	0.0%	0.0%	0.0%	0.0%			
71	Basic Telephone - Residential		\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
72	Basic Telephone - Commercial		\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
73	Custom Calling		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
74	Long Distance		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
75	Internet Access - Residential		\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00
76	Internet Access - Commercial		\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
77										
78	Equipment Rental									
79	Annual rate increase			1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
80	Analog Set Top Box (STB)		\$3.50	\$3.54	\$3.57	\$3.61	\$3.64	\$3.68	\$3.87	\$4.02
81	Analog Remote Controls		\$0.25	\$0.25	\$0.26	\$0.26	\$0.26	\$0.26	\$0.28	\$0.29
82	Digital STBs		\$5.00	\$5.05	\$5.10	\$5.15	\$5.20	\$5.26	\$5.52	\$5.75
83	Digital Remote Controls		\$0.25	\$0.25	\$0.26	\$0.26	\$0.26	\$0.26	\$0.28	\$0.29
84										
85	Misc. Revenues per Subscriber									
86	Ad sales		\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08
87	Cable guide		\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
88	Home shopping		\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
89	Late charges		\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
90	Other revenue		\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
91										

	A	B	D	E	F	G	H	I	N	R
1		Scenario = HFC\$450	2003	2004	2005	2006	2007	2008	2013	2017
92		Platform Expenses								
93		Basic Telephone Switch Generic Software	\$25,000							
94		Custom Calling Switch Generic Software	\$0							
95		Long Distance Switch Generic Software	\$0							
96		Internet Access Platform Expenses	\$50,000							
97		Cable Television Platform Expenses	\$50,000							
98										
99		Support System Expenses								
100		Basic Telephone Support System Expenses	\$25,000							
101		Custom Calling Support System Expenses	\$0							
102		Long Distance Support System Expenses	\$0							
103		Internet Access Support System Expenses	\$50,000							
104		Basic Cable Support System Expenses	\$100,000							
105										
106		Third Party Expenses								
107		Basic telephone fees per sub.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
108		Long distance fees per subscriber	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
109		Internet access fees per sub.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
110										
111		Programming Costs								
112		Programming Rate Increase	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
113		Basic cable programming fees per sub.	\$1.00	\$1.01	\$1.02	\$1.03	\$1.04	\$1.05	\$1.10	\$1.15
114		Expanded cable programming fees per sub	\$13.00	\$13.13	\$13.26	\$13.39	\$13.53	\$13.66	\$14.36	\$14.94
115		Digital cable programming fees per sub.	\$6.60	\$6.57	\$6.63	\$6.70	\$6.76	\$6.83	\$7.18	\$7.47
116		HBO programming fees per sub.	\$6.00	\$6.06	\$6.12	\$6.18	\$6.24	\$6.31	\$6.63	\$6.90
117		Showtime programming fees per sub.	\$5.00	\$5.05	\$5.10	\$5.15	\$5.20	\$5.26	\$5.52	\$5.75
118		Cinemax programming fees per sub.	\$4.35	\$4.39	\$4.44	\$4.48	\$4.53	\$4.57	\$4.81	\$5.00
119		Starz programming fees per sub.	\$4.35	\$4.39	\$4.44	\$4.48	\$4.53	\$4.57	\$4.81	\$5.00
120										
121		ILEC Interconnection Expenses								
122		Residential subs per ILEC access line	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
123		Commercial subs per ILEC access line	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
124		Cost per ILEC access line per month	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
125										
126		Internet Access Engineering								
127		Bandwidth per residential sub (kbps)	150	188	225	263	300	300	300	300
128		Bandwidth per commercial sub (kbps)	250	313	375	438	500	500	500	500
129		Residential overbooking ratio	10	10	10	10	10	10	10	10
130		Commercial overbooking ratio	10	10	10	10	10	10	10	10
131										
132		Internet Backbone Charges								
133		Internet backbone cost decline	2.5%	2.5%	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%
134		100 Mbps access per month	\$37,400	\$36,465	\$35,553	\$34,665	\$33,798	\$33,798	\$33,798	\$33,798
135		10 Mbps access per month	\$3,745	\$3,651	\$3,560	\$3,471	\$3,384	\$3,384	\$3,384	\$3,384
136		2 Mbps access per month	\$750	\$731	\$713	\$695	\$678	\$678	\$678	\$678
137										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
138	Staffing Requirements (Headcount)									
139	General Manager		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
140	Network Engineer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
141	Field Service Supervisor		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
142	Customer Service Supervisor		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
143	Marketing/PR Coordinator		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
144	Customer Service Reps		3.9	4.7	4.9	5.0	5.0	5.0	5.0	5.0
145	Installers		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	Field Technicians		5.3	6.7	7.4	8.0	8.0	8.0	8.0	8.0
147	Headend Technicians		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
148	Data Technician		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
149										
150	Annual Compensation (Unloaded)									
151	Annual Increase		3.0%	3.0%	3.0%	3.0%	3.0%	1.5%	1.5%	1.5%
152	General Manager		\$120,000	\$123,600	\$127,308	\$131,127	\$135,061	\$137,087	\$147,682	\$156,744
153	Network Engineer		\$75,000	\$77,250	\$79,568	\$81,955	\$84,413	\$85,679	\$92,301	\$97,965
154	Field Service Supervisor		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
155	Customer Service Supervisor		\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$57,120	\$61,534	\$65,310
156	Marketing/PR Coordinator		\$80,000	\$82,400	\$84,872	\$87,418	\$90,041	\$91,391	\$98,454	\$104,496
157	Customer Service Reps		\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$45,696	\$49,227	\$52,248
158	Installers		\$24,000	\$24,720	\$25,462	\$26,225	\$27,012	\$27,417	\$29,536	\$31,349
159	Field Technicians		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
160	Headend Technicians		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
161	Data Technician		\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$114,239	\$123,068	\$130,620
162										
163	Allocated Building Costs (e.g. Rent, Utilities, Etc.)									
164	Annual Building Cost Increase		3.0%	3.0%	3.0%	3.0%	3.0%			
165	Building Monthly Expense		\$1,030	\$1,061	\$1,093	\$1,126	\$1,126	\$1,126	\$1,126	\$1,126
166	Building Monthly Capital		\$485	\$470	\$456	\$443	\$443	\$443	\$443	\$443
167										
168	Tele-Sales Channel Expense									
169	Sales per Sales Rep per Month		475	650	825	1,000	1,000	1,000	1,000	1,000
170	Base Salary & Annual Increase		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
171	Base salary per Sales Rep (loaded)		\$82,400	\$84,872	\$87,418	\$90,041	\$92,742	\$107,513	\$121,007	
172	Product training per sales rep		\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
173										
174	Marketing									
175	Direct marketing budget per feature		\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00
176										
177	Customer Service									
178	Cost per minute for customer service		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
179	Calls per Internet Access sub per year		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180	Minutes per Internet Access call		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
181										
182	Billing Costs									
183	Cost per subscriber bill per month		\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50
184										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
185	Meters Passed									
186	% Residential meters passed		50%	100%	100%	100%	100%	100%	100%	100%
187	% Commercial meters passed		50%	100%	100%	100%	100%	100%	100%	100%
188										
189	Outside Plant Construction Costs									
190	Blended Cost per meter passed		\$450	\$450	\$450	\$450	\$450	\$450	\$450	\$450
191										
192	Fixed Equipment Capital									
193	Telephone switch capital		\$0							
194	Cable headend capital		\$1,500,000							
195	Internet access capital		\$250,000							
196	Test equipment		\$150,000							
197										
198	Annual Vendor Maintenance as % of Fixed Capital									
199	Telephone		5%							
200	Cable		5%							
201	Internet		5%							
202										
203	Vehicle Capital									
204	Bucket Trucks		\$150,000							
205	Pick-Up Trucks		\$100,000							
206										
207	Service Drop Installation Labor									
208	Labor cost increase		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
209	Service drop installation labor		\$75	\$79	\$83	\$87	\$91	\$96	\$122	\$148
210	CAT5 Inside Wiring (high speed Internet only)		\$100	\$105	\$110	\$116	\$122	\$122	\$122	\$122
211										
212	Service Drop Materials									
213	Materials cost decline		20.0%	10.0%	7.5%	5.0%	5.0%	5.0%	5.0%	5.0%
214	NIU, drop enclosure and fiber drop		\$50	\$48	\$45	\$43	\$41	\$39	\$30	\$24
215										
216	Variable Capital									
217	Annual cost decline		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
218	Telephone CPE		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
219	Analog STB & Remote Capital		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
220	Digital STB & Remote Capital		\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
221	Variable capital per churned subscriber		10%	10%	10%	10%	10%	10%	10%	10%
222										
223	Financial									
224	Utility provided cash		\$2,200,000	\$500,000	\$1,000,000	\$400,000	\$0			
225	Discount Rate		5%							
226	Salary Overhead Loading		60%							
227	Engineering Furnish & Install Loading (EF&I)		5%							
228	Bond Anticipation Note (BAN) Rate		5%							
229	Billable Months - Year1		30							
230	Billable Months - Year2		10							
231	Bond Term		10							
232	Bond Rate		5.0%							
233										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450	2003	2004	2005	2006	2007	2008	2008	2013	2017
234	Revenue									
235										
236	Addressable Market Size									
237	Residential Meters Passed	20,308	34,184	41,431	41,846	42,264	42,475	43,548	44,426	
238	Commercial Meters Passed	1,250	2,094	2,525	2,538	2,550	2,557	2,589	2,615	
239										
240	Local Residential Penetrations									
241	Basic Telephone	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
242	Custom Calling	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
243	Long Distance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
244	Internet Access	14.0%	16.3%	19.4%	20.5%	21.0%	21.0%	21.0%	21.0%	21.0%
245	Basic Cable	14.0%	16.7%	20.2%	21.4%	22.0%	22.0%	22.0%	22.0%	22.0%
246	Expanded Basic Cable	12.6%	15.0%	18.2%	19.3%	19.8%	19.8%	19.8%	19.8%	19.8%
247	Digital Cable	3.50%	5.56%	8.99%	10.31%	11.00%	11.00%	11.00%	11.00%	11.00%
248										
249	Residential Churn									
250	Basic Telephone	0	0	0	0	0	0	0	0	0
251	Custom Calling	0	0	0	0	0	0	0	0	0
252	Long Distance	0	0	0	0	0	0	0	0	0
253	Internet Access	0	569	1047	1410	1393	1331	1365	1392	
254	Basic Cable	0	569	1068	1466	1456	1395	1430	1459	
255	Expanded Basic	0	512	961	1320	1310	1255	1287	1313	
256	Digital Cable	0	142	356	652	701	697	715	729	
257										
258	Residential Sub Additions									
259	Basic Telephone	0	0	0	0	0	0	0	0	0
260	Custom Calling	0	0	0	0	0	0	0	0	0
261	Long Distance	0	0	0	0	0	0	0	0	0
262	Internet Access	2,843	3,309	3,520	1,924	1,698	1,376	1,410	1,439	
263	Basic Cable	2,843	3,423	3,749	2,046	1,796	1,441	1,478	1,507	
264	Expanded Basic	2,559	1,331	2,181	1,241	1,037	721	739	754	
265	Digital Cable	711	1,331	2,181	1,241	1,037	721	739	754	
266										
267	Residential Subs (at end of period)									
268	Basic Telephone	0	0	0	0	0	0	0	0	0
269	Custom Calling	0	0	0	0	0	0	0	0	0
270	Long Distance	0	0	0	0	0	0	0	0	0
271	Internet Access	2,843	5,583	8,056	8,571	8,875	8,920	9,145	9,329	
272	Basic Cable	2,843	5,697	8,378	8,958	9,298	9,345	9,581	9,774	
273	Expanded Basic	2,559	5,128	7,541	8,062	8,368	8,410	8,623	8,796	
274	Digital Cable	711	1,899	3,724	4,313	4,649	4,672	4,790	4,887	
275	HBO	853	1,760	2,641	2,852	2,989	3,004	3,080	3,142	
276	Showtime	426	880	1,320	1,426	1,495	1,502	1,540	1,571	
277	Cinemax	426	880	1,320	1,426	1,495	1,502	1,540	1,571	
278	Starz	426	880	1,320	1,426	1,495	1,502	1,540	1,571	
279										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
280	Average Residential Subs									
281	Basic Telephone		0	0	0	0	0	0	0	0
282	Custom Calling		0	0	0	0	0	0	0	0
283	Long Distance		0	0	0	0	0	0	0	0
284	Internet Access		1,422	4,213	6,820	8,313	8,723	8,898	9,122	9,306
285	Basic Cable		1,422	4,270	7,038	8,668	9,128	9,321	9,557	9,749
286	Expanded Basic		1,279	3,843	6,334	7,801	8,215	8,389	8,601	8,774
287	Digital Cable		355	1,305	2,811	4,018	4,481	4,661	4,778	4,875
288	HBO		426	1,307	2,201	2,746	2,921	2,997	3,073	3,135
289	Showtime		213	653	1,100	1,373	1,460	1,498	1,536	1,567
290	Cinemax		213	653	1,100	1,373	1,460	1,498	1,536	1,567
291	Starz		213	653	1,100	1,373	1,460	1,498	1,536	1,567
292										
293	PPV Services									
294	Movies		1,173	4,697	10,322	13,773	15,061	15,380	15,769	16,086
295	Events		141	564	1,239	1,653	1,807	1,846	1,892	1,930
296	Adult		0	0	0	0	0	0	0	0
297										
298	Equipment									
299	Analog Set Top Box (STB)		0	0	0	0	0	0	0	0
300	Analog Remote Controls		0	0	0	0	0	0	0	0
301	Digital STBs		533	1,957	4,217	6,028	6,722	6,991	7,168	7,312
302	Digital Remote Controls		533	1,957	4,217	6,028	6,722	6,991	7,168	7,312
303										
304	Commercial Penetrations									
305	Basic Telephone		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
306	Custom Calling		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
307	Long Distance		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
308	Internet Access		15.0%	15.5%	16.0%	16.5%	17.0%	17.0%	17.0%	17.0%
309										
310	Commercial Churn									
311	Basic Telephone		0	0	0	0	0	0	0	0
312	Custom Calling		0	0	0	0	0	0	0	0
313	Long Distance		0	0	0	0	0	0	0	0
314	Internet Access		0	19	16	11	6	6	4	5
315										
316	Commercial Sub Additions									
317	Basic Telephone		0	0	0	0	0	0	0	0
318	Custom Calling		0	0	0	0	0	0	0	0
319	Long Distance		0	0	0	0	0	0	0	0
320	Internet Access		188	156	112	55	57	44	45	45
321										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
322	Commercial Subs (at end of period)									
323	Basic Telephone	0	0	0	0	0	0	0	0	0
324	Custom Calling	0	0	0	0	0	0	0	0	0
325	Long Distance	0	0	0	0	0	0	0	0	0
326	Internet Access	188	325	404	419	434	435	440	445	
327										
328	Average Commercial Subs									
329	Basic Telephone	0	0	0	0	0	0	0	0	0
330	Custom Calling	0	0	0	0	0	0	0	0	0
331	Long Distance	0	0	0	0	0	0	0	0	0
332	Internet Access	94	256	364	411	426	434	440	444	
333										
334	Residential Install Revenues by Service									
335	Telephone	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
336	Internet Access	\$113,722	\$144,769	\$131,983	\$60,135	\$42,439	\$34,392	\$35,261	\$35,971	
337	Cable	\$0	\$21,393	\$46,865	\$38,361	\$44,893	\$36,030	\$36,940	\$37,684	
338	Total	\$113,722	\$166,162	\$178,849	\$98,497	\$87,333	\$70,423	\$72,201	\$73,656	
339										
340	Residential Monthly Revenues by Service									
341	Basic Telephone	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
342	Custom Calling	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
343	Long Distance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
344	Internet Access	\$187,641	\$1,761,135	\$3,273,488	\$3,990,411	\$4,187,060	\$4,270,875	\$4,378,720	\$4,466,953	
345	Basic Cable	\$46,910	\$450,700	\$861,519	\$1,071,704	\$1,139,847	\$1,175,620	\$1,266,789	\$1,344,789	
346	Expanded Basic Cable	\$84,439	\$811,260	\$1,550,734	\$1,929,067	\$2,051,725	\$2,116,117	\$2,280,220	\$2,420,620	
347	Digital Cable	\$11,728	\$137,730	\$344,151	\$496,823	\$559,566	\$587,810	\$633,395	\$672,394	
348	HBO	\$12,668	\$124,124	\$242,441	\$305,572	\$328,228	\$340,182	\$366,563	\$389,133	
349	Showtime	\$7,037	\$68,958	\$134,689	\$169,762	\$182,349	\$188,990	\$203,646	\$216,185	
350	Cinemax	\$4,926	\$48,271	\$94,282	\$118,834	\$127,644	\$132,293	\$142,552	\$151,329	
351	Starz	\$5,629	\$55,166	\$107,751	\$135,810	\$145,879	\$151,192	\$162,917	\$172,948	
352	Total	\$360,975	\$3,457,345	\$6,609,055	\$8,217,982	\$8,722,299	\$8,963,079	\$9,434,801	\$9,834,351	
353										
354	PPV Revenue					\$46.45				
355	Movies	\$2,932	\$11,861	\$26,324	\$35,475	\$39,182	\$40,012	\$41,022	\$41,849	
356	Events	\$2,111	\$8,540	\$18,953	\$25,542	\$28,211	\$28,809	\$29,536	\$30,131	
357	Adult	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
358	Total	\$5,043	\$20,400	\$45,278	\$61,018	\$67,393	\$68,820	\$70,558	\$71,980	
359										
360	Equipment Rental									
361	Analog Set Top Box (STB)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
362	Analog Remote Controls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
363	Digital STBs	\$8,796	\$103,298	\$258,113	\$372,617	\$419,675	\$440,858	\$475,046	\$504,296	
364	Digital Remote Controls	\$440	\$5,165	\$12,906	\$18,631	\$20,984	\$22,043	\$23,752	\$25,215	
365	Total	\$9,235	\$108,463	\$271,019	\$391,248	\$440,658	\$462,901	\$498,798	\$529,511	
366										

A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450	2003	2004	2005	2006	2007	2008	2013	2017
367	Misc. Revenues per Subscriber								
368	Ad sales	\$375	\$3,570	\$6,756	\$8,321	\$8,763	\$8,949	\$9,174	\$9,359
369	Cable guide	\$47	\$446	\$845	\$1,040	\$1,095	\$1,119	\$1,147	\$1,170
370	Home shopping	\$704	\$6,694	\$12,668	\$15,603	\$16,431	\$16,778	\$17,202	\$17,549
371	Late charges	\$2,346	\$22,312	\$42,227	\$52,009	\$54,769	\$55,928	\$57,340	\$58,496
372	Other revenue	\$563	\$5,355	\$10,135	\$12,482	\$13,144	\$13,423	\$13,762	\$14,039
373	Total	\$4,034	\$38,376	\$72,631	\$89,456	\$94,202	\$96,196	\$98,625	\$100,613
374									
375	Commercial Install Revenues by Service								
376	Basic Telephone	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
377	Internet Access	\$7,500	\$0	\$4,197	\$1,722	\$1,418	\$1,111	\$1,125	\$1,136
378	Total	\$7,500	\$0	\$4,197	\$1,722	\$1,418	\$1,111	\$1,125	\$1,136
379									
380	Commercial Monthly Revenues by Service								
381	Basic Telephone	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
382	Custom Calling	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
383	Long Distance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
384	Internet Access	\$12,375	\$107,015	\$327,844	\$370,228	\$383,527	\$390,695	\$395,603	\$399,574
385	Total	\$12,375	\$107,015	\$327,844	\$370,228	\$383,527	\$390,695	\$395,603	\$399,574
386									
387	Total Residential Services								
388	Installation	\$113,722	\$166,162	\$178,849	\$98,497	\$87,333	\$70,423	\$72,201	\$73,656
389	Monthly	\$360,975	\$3,457,345	\$6,609,055	\$8,217,982	\$8,722,299	\$8,963,079	\$9,434,801	\$9,834,351
390	PPV	\$5,043	\$20,400	\$45,278	\$61,018	\$67,393	\$68,820	\$70,558	\$71,980
391	Equipment Rental	\$9,235	\$108,463	\$271,019	\$391,248	\$440,658	\$462,901	\$498,798	\$529,511
392	Misc Revenue	\$4,034	\$38,376	\$72,631	\$89,456	\$94,202	\$96,196	\$98,625	\$100,613
393	Total	\$493,010	\$3,790,746	\$7,176,831	\$8,858,201	\$9,411,885	\$9,661,419	\$10,174,984	\$10,610,110
394									
395	Total Commercial								
396	Install	\$7,500	\$0	\$4,197	\$1,722	\$1,418	\$1,111	\$1,125	\$1,136
397	Monthly	\$12,375	\$107,015	\$327,844	\$370,228	\$383,527	\$390,695	\$395,603	\$399,574
398	Total	\$19,875	\$107,015	\$332,041	\$371,950	\$384,945	\$391,806	\$396,728	\$400,711
399									
400	Total Revenue								
401	Residential	\$493,010	\$3,790,746	\$7,176,831	\$8,858,201	\$9,411,885	\$9,661,419	\$10,174,984	\$10,610,110
402	Commercial	\$19,875	\$107,015	\$332,041	\$371,950	\$384,945	\$391,806	\$396,728	\$400,711
403	Total	\$512,885	\$3,897,760	\$7,508,872	\$9,230,151	\$9,796,830	\$10,053,225	\$10,571,713	\$11,010,821
404									

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
405	Expenses									
406										
407	Platform Expenses									
408	Basic Telephone Switch Generic Software	\$0								
409	Custom Calling Switch Generic Software	\$0								
410	Long Distance Switch Generic Software	\$0								
411	Internet Access Platform Expenses	\$50,000								
412	Cable Television Platform Expenses	\$50,000								
413	Total Platform Expenses	\$100,000								
414										
415	Support System Expenses									
416	Basic Telephone Support System Expenses	\$0								
417	Custom Calling Support System Expenses	\$0								
418	Long Distance Support System Expenses	\$0								
419	Internet Access Support System Expenses	\$50,000								
420	Cable Support System Expenses	\$100,000								
421	Total Support System Expenses	\$150,000								
422										
423	Third Party Expenses									
424	Basic telephone fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
425	Long distance fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
426	Internet access fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
427	Total Third Party Expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
428										
429	Programming Fees									
430	Basic cable programming fees	\$4,691	\$45,070	\$86,152	\$107,170	\$113,985	\$117,562	\$126,679	\$134,479	
431	Expanded cable programming fees	\$54,885	\$527,319	\$1,007,977	\$1,253,893	\$1,333,622	\$1,375,476	\$1,482,143	\$1,573,403	
432	Digital cable programming fees	\$7,623	\$89,525	\$223,698	\$322,935	\$363,718	\$382,077	\$411,706	\$437,056	
433	HBO programming fees	\$8,444	\$82,750	\$161,627	\$203,715	\$218,819	\$226,788	\$244,375	\$259,422	
434	Showtime programming fees	\$3,518	\$34,479	\$67,345	\$84,881	\$91,174	\$94,495	\$101,823	\$108,092	
435	Cinemax programming fees	\$3,061	\$29,997	\$58,590	\$73,847	\$79,322	\$82,211	\$88,586	\$94,040	
436	Starz programming fees	\$3,061	\$29,997	\$58,590	\$73,847	\$79,322	\$82,211	\$88,586	\$94,040	
437	Total Programming fees	\$85,283	\$839,136	\$1,663,978	\$2,120,288	\$2,279,961	\$2,360,819	\$2,543,899	\$2,700,533	
438										
439	Network Facilities Expenses									
440	ILEC access trunks required	0	0	0	0	0	0	0	0	0
441	ILEC interconnection facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
442	End of Year Bandwidth Requirement	42,646	104,689	181,262	224,979	266,264	267,595	274,352	279,881	
443	Average annual bandwidth requirement	21,323	73,668	142,976	203,120	245,621	266,930	273,670	279,185	
444	100 Mbps connections required	1.00	1.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00
445	10 Mbps connections required	3.00	8.00	19.00	23.00	27.00	27.00	28.00	28.00	
446	2 Mbps connections required	11.00	37.00	91.00	113.00	134.00	134.00	138.00	140.00	
447	100 Mbps cost	\$374,000	\$492,278	\$853,281	\$1,247,923	\$1,216,725	\$1,216,725	\$1,216,725	\$1,216,725	
448	10 Mbps cost	\$112,350	\$394,349	\$811,701	\$958,020	\$1,096,517	\$1,096,517	\$1,137,129	\$1,137,129	
449	2 Mbps cost	\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,138,647	
450	Minimum Internet backbone Charges	\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129	
451	Total Network Facilities Charges	\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129	
452										
453	Monthly cost per residential Internet sub	\$9.67	\$7.22	\$9.51	\$9.45	\$10.41	\$10.21	\$10.25	\$10.18	

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
454										
455	Staffing Expenses									
456	General Manager		\$172,800	\$197,760	\$203,693	\$209,804	\$216,098	\$219,339	\$236,291	\$250,790
457	Network Engineer		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
458	Field Service Supervisor		\$76,800	\$98,880	\$101,846	\$104,902	\$108,049	\$109,670	\$118,145	\$125,395
459	Customer Service Supervisor		\$64,000	\$82,400	\$84,872	\$87,418	\$90,041	\$91,391	\$98,454	\$104,496
460	Marketing/PR Coordinator		\$102,400	\$131,840	\$135,795	\$139,869	\$144,065	\$146,226	\$157,527	\$167,193
461	Customer Service Reps		\$108,800	\$257,088	\$318,149	\$343,393	\$360,163	\$365,565	\$393,818	\$417,984
462	Installers		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
463	Field Technicians		\$220,800	\$524,064	\$684,515	\$775,663	\$864,391	\$877,357	\$945,162	\$1,003,161
464	Headend Technicians		\$67,200	\$98,880	\$101,846	\$104,902	\$108,049	\$109,670	\$118,145	\$125,395
465	Data Technician		\$112,000	\$164,800	\$169,744	\$174,836	\$180,081	\$182,783	\$196,909	\$208,992
466	Total Staffing Expense		\$924,800	\$1,555,712	\$1,800,461	\$1,940,787	\$2,070,936	\$2,102,000	\$2,264,451	\$2,403,406
467										
468	Staffing Ratios									
469	Basic Cable Subs per Customer Service Rep		1,672	1,461	1,788	1,824	1,860	1,869	1,916	1,955
470	Basic Cable Subs per Field Technician		1,236	1,075	1,247	1,212	1,162	1,168	1,198	1,222
471										
472	Allocated Building Expense									
473	Site 1 Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
474	Total Allocated Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
475										
476	Sales Channel Expense									
477	Sales Reps required		3	2	2	1	1	1	1	1
478	Sales Rep salary		\$240,000	\$164,800	\$169,744	\$87,418	\$90,041	\$92,742	\$107,513	\$121,007
479	Total Sales Channel Expense		\$240,000	\$164,800	\$169,744	\$87,418	\$90,041	\$92,742	\$107,513	\$121,007
480										
481	Marketing Expenses									
482	Direct marketing cost		\$457,155	\$477,438	\$587,102	\$325,378	\$281,180	\$215,128	\$220,532	\$224,953
483	Total Marketing Expenses		\$457,155	\$477,438	\$587,102	\$325,378	\$281,180	\$215,128	\$220,532	\$224,953
484										
485	Customer Service Expenses									
486	Internet Access CS minutes		0	0	0	0	0	0	0	0
487	Cost		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
488	Total Customer Service		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
489										
490	Billing Costs									
491	Subscriber bills		1,422	4,270	7,038	8,668	9,128	9,321	9,557	9,749
492	Billing cost		\$25,587	\$76,864	\$126,682	\$156,028	\$164,306	\$167,784	\$172,021	\$175,487
493	Total Billing Cost		\$25,587	\$76,864	\$126,682	\$156,028	\$164,306	\$167,784	\$172,021	\$175,487
494										
495	Vendor Maintenance									
496	Telephone		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
497	Cable		\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
498	Internet		\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500
499	Total Vendor Maintenance		\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500
500										
501										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
502	Capital Expenditures									
503										
504	Total Meters Passed									
505	Residential Meters Passed		20,308	41,021	41,431	41,846	42,264	42,475	43,548	44,426
506	Commercial Meters Passed		1,250	2,513	2,525	2,538	2,550	2,557	2,589	2,615
507	Total Meters Passed		21,558	43,534	43,956	44,383	44,815	45,032	46,137	47,040
508										
509	Network Construction Costs									
510	New meters passed		21,558	21,976	423	427	431	218	223	228
511	Construction costs		\$9,700,875	\$9,889,268	\$190,248	\$192,123	\$194,015	\$97,963	\$100,401	\$102,395
512	Total Annual Network Construction Cost		\$9,700,875	\$9,889,268	\$190,248	\$192,123	\$194,015	\$97,963	\$100,401	\$102,395
513										
514	Cumulative Network Construction Costs		\$9,700,875	\$19,590,143	\$19,780,391	\$19,972,513	\$20,166,529	\$20,264,492	\$20,761,597	\$21,168,172
515										
516	Fixed Equipment Capital									
517	Telephone switch capital		\$0							
518	Cable headend capital		\$1,500,000							
519	Internet access capital		\$250,000							
520	Test equipment		\$150,000							
521	Total Fixed Capital		\$1,900,000							
522										
523	Vehicle Capital									
524	Bucket Trucks		\$150,000							
525	Pick-Up Trucks		\$100,000							
526	Total Vehicle Capital		\$250,000							
527										
528	New Variable Capital Requirements									
529	Net new residential telephone subscribers		0	0	0	0	0	0	0	0
530	Net new residential Internet subscribers		2,843	2,797	2,577	655	444	178	182	186
531	Net new residential cable subscribers		2,843	2,911	2,788	726	486	186	191	194
532	Net new commercial telephone subscribers		0	0	0	0	0	0	0	0
533	Net new commercial Internet subscribers		168	139	98	45	52	39	41	41
534										
535	Variable Equipment Capital									
536	New service drops		3,031	3,050	2,886	771	537	225	232	236
537	New telephone subs		0	0	0	0	0	0	0	0
538	New Internet subs		3,031	2,936	2,675	701	496	217	223	227
539	New cable subs		2,843	2,911	2,788	726	486	186	191	194
540	Service drop installation labor		\$227,291	\$240,195	\$238,611	\$66,973	\$48,987	\$21,566	\$28,296	\$35,025
541	NIU, drop enclosure and fiber drop (materials)		\$151,528	\$144,880	\$130,217	\$33,068	\$21,884	\$8,717	\$6,934	\$5,751
542	CAT5 Inside Wiring		\$303,055	\$308,296	\$294,948	\$81,096	\$60,275	\$26,358	\$27,100	\$27,595
543	Analog STB & Remote Capital		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
544	Digital STB & Remote Capital		\$268,536	\$363,899	\$464,631	\$131,147	\$91,051	\$34,868	\$35,748	\$36,469
545	Total Annual Variable Capital		\$948,410	\$1,057,270	\$1,128,407	\$312,284	\$222,197	\$91,508	\$98,078	\$104,841
546										
547	Allocated Building Capital									
548	Annual building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
549	Total Allocated Building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
550										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
551	EF&I									
552	EF&I		\$640,264	\$547,618	\$66,215	\$25,494	\$21,076	\$9,739	\$10,190	\$10,627
553	Total EF&I		\$640,264	\$547,618	\$66,215	\$25,494	\$21,076	\$9,739	\$10,190	\$10,627
554										
555	Capital Expenditure Summary									
556	Network Construction		\$9,700,875	\$9,889,268	\$190,248	\$192,123	\$194,015	\$97,963	\$100,401	\$102,395
557	Fixed Equipment		\$1,900,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
558	Vehicles		\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
559	Variable Capital		\$948,410	\$1,057,270	\$1,128,407	\$312,284	\$222,197	\$91,508	\$98,078	\$104,841
560	Building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
561	EF&I Loading		\$640,264	\$547,618	\$66,215	\$25,494	\$21,076	\$9,739	\$10,190	\$10,627
562	Total Annual Capital Expenditures		\$13,445,549	\$11,499,975	\$1,390,516	\$535,377	\$442,601	\$204,522	\$213,980	\$223,175
563										
564	Cumulative Capital Expenditures		\$13,445,549	\$24,945,524	\$26,336,040	\$26,871,417	\$27,314,018	\$27,518,540	\$28,569,163	\$29,447,506
565										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
566	Proforma									
567										
568	Total Revenues									
569	Residential		\$493,010	\$3,790,746	\$7,176,831	\$8,858,201	\$9,411,885	\$9,661,419	\$10,174,984	\$10,610,110
570	Commercial		\$19,875	\$107,015	\$332,041	\$371,950	\$384,945	\$391,806	\$396,728	\$400,711
571	Total Revenues		\$512,885	\$3,897,760	\$7,508,872	\$9,230,151	\$9,796,830	\$10,053,225	\$10,571,713	\$11,010,821
572										
573	Operating Expenses									
574	Platform expenses		\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
575	Support system expenses		\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
576	Third party expenses		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
577	Programming fees		\$85,283	\$839,136	\$1,663,978	\$2,120,288	\$2,279,961	\$2,360,819	\$2,543,899	\$2,700,533
578	Network facilities expenses		\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129
579	Staffing expenses		\$649,600	\$1,084,384	\$1,261,645	\$1,370,107	\$1,476,668	\$1,498,818	\$1,614,652	\$1,713,733
580	Allocated Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
581	Vendor Maintenance		\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500
582	Total Operating Expense		\$1,166,883	\$2,388,639	\$3,804,416	\$4,533,623	\$4,947,482	\$5,050,490	\$5,381,937	\$5,652,401
583										
584	SG&A									
585	Sales Channel Expense		\$240,000	\$164,800	\$169,744	\$87,418	\$90,041	\$92,742	\$107,513	\$121,007
586	Marketing Expenses		\$559,555	\$559,838	\$671,974	\$412,796	\$371,221	\$306,519	\$318,986	\$329,449
587	Customer Service Expenses		\$172,800	\$339,488	\$403,021	\$430,811	\$450,204	\$456,957	\$492,272	\$522,480
588	Billing Expenses		\$25,587	\$76,864	\$126,682	\$156,028	\$164,306	\$167,784	\$172,021	\$175,487
589	Total SG&A		\$997,943	\$1,140,989	\$1,371,420	\$1,087,053	\$1,075,771	\$1,024,002	\$1,090,792	\$1,148,423
590										
591	Total Expense		\$2,164,826	\$3,529,629	\$5,175,836	\$5,620,676	\$6,023,253	\$6,074,492	\$6,472,730	\$6,800,824
592										
593	Operating Income		(\$1,651,941)	\$368,132	\$2,333,036	\$3,609,474	\$3,773,577	\$3,978,734	\$4,098,983	\$4,209,997
594										
595	Operating Margin		-322%	9%	31%	39%	39%	40%	39%	38%
596										
597	Capital									
598	Network Construction		\$9,700,875	\$9,889,268	\$190,248	\$192,123	\$194,015	\$97,963	\$100,401	\$102,395
599	Fixed Equipment		\$1,900,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
600	Vehicles		\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
601	Variable Capital		\$948,410	\$1,057,270	\$1,128,407	\$312,284	\$222,197	\$91,508	\$98,078	\$104,841
602	Building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
603	EF&I Loading		\$640,264	\$547,618	\$66,215	\$25,494	\$21,076	\$9,739	\$10,190	\$10,627
604	Total Capital		\$13,445,549	\$11,499,975	\$1,390,516	\$535,377	\$442,801	\$204,522	\$213,980	\$223,175
605										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450	2003	2004	2005	2006	2007	2008	2013	2017	
606	Cash Flow Summary	Year1	Year2	Year3	Year4	Year5	Year6	Year11	Year15	
607										
608	Operating Income									
609	Total Revenue	\$512,885	\$3,897,760	\$7,508,872	\$9,230,151	\$9,796,830	\$10,053,225	\$10,571,713	\$11,010,821	
610	Total Expense	(\$2,164,826)	(\$3,529,629)	(\$5,175,836)	(\$5,620,676)	(\$6,023,253)	(\$6,074,492)	(\$6,472,730)	(\$6,800,824)	
611	Total	(\$1,651,941)	\$368,132	\$2,333,036	\$3,609,474	\$3,773,577	\$3,978,734	\$4,098,983	\$4,209,997	
612										
613	Annual Cash Flow									
614	Total Capital Expenditures	(\$13,445,549)	(\$11,499,975)	(\$1,390,516)	(\$535,377)	(\$442,601)	(\$204,522)	(\$213,980)	(\$223,175)	
615	Interest income	\$0	\$0	\$0	\$0	\$0	\$0	\$10,539	\$892,037	
616	Total	(\$15,097,490)	(\$11,131,844)	\$942,520	\$3,074,097	\$3,330,977	\$3,774,211	\$3,895,541	\$4,878,860	
617										
618	Cumulative Cash	(\$15,097,490)	(\$26,229,334)	(\$25,286,813)	(\$22,212,716)	(\$18,881,740)	(\$15,107,528)	\$4,116,852	\$22,961,427	
619										
620	Net Present Value	(\$14,378,562)	(\$24,475,472)	(\$23,661,288)	(\$21,132,220)	(\$18,522,313)	(\$15,705,939)	(\$3,298,850)	\$5,979,685	
621										
622	IRR	NM	NM	NM	-55.7%	-35.1%	-21.5%	2.4%	8.1%	
623										
624	Indicator Summary									
625	Years to Cash Positive	3								
626	Years to Break Even	10								
627	NPV - Year10	(\$5,576,492)								
628	NPV - Year15	\$5,979,685								
629	IRR - Year10	0.1%								
630	IRR - Year15	8.1%								
631										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = HFC\$450		2003	2004	2005	2006	2007	2008	2013	2017
632	Bonding Summary	1	2	3	4	5	6	11	15	
633										
634	Bonding Strategy									
635	Bond Anticipation Note (BAN) Balance	(\$13,500,000)	(\$25,000,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
636	Bond Balance (End of Year)	\$0	(\$26,400,000)	(\$24,301,079)	(\$22,097,212)	(\$19,783,152)	(\$17,353,389)	(\$3,256,115)		\$0
637	Annual Bond Payment (Principal and Interest)	\$0	\$0	\$3,418,921	\$3,418,921	\$3,418,921	\$3,418,921	\$3,418,921	\$3,418,921	\$0
638										
639	Operating Income									
640	Total Revenue	\$512,885	\$3,897,760	\$7,508,872	\$9,230,151	\$9,796,830	\$10,053,225	\$10,571,713	\$11,010,821	
641	Total Expense	(\$2,164,826)	(\$3,529,629)	(\$5,175,836)	(\$5,620,676)	(\$6,023,253)	(\$6,074,492)	(\$6,472,730)	(\$6,800,824)	
642	Total	(\$1,651,941)	\$368,132	\$2,333,036	\$3,609,474	\$3,773,577	\$3,978,734	\$4,098,983	\$4,209,997	
643										
644	Operating Income After Financing Costs									
645	Annual BAN Interest	(\$472,500)	(\$875,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
646	Annual bond interest	\$0	\$0	(\$1,320,000)	(\$1,215,054)	(\$1,104,861)	(\$989,158)	(\$317,859)		\$0
647	Interest income	\$0	\$6,500	\$6,483	\$2,987	\$5,896	\$1,793	\$112,073	\$594,959	
648	Total	(\$2,124,441)	(\$500,368)	\$1,019,520	\$2,397,408	\$2,674,612	\$2,991,369	\$3,893,197	\$4,804,956	
649										
650	Annual Cash Flow									
651	Total Capital Expenditures	(\$13,445,549)	(\$11,499,975)	(\$1,390,516)	(\$535,377)	(\$442,601)	(\$204,522)	(\$213,980)	(\$223,175)	
652	Bond Proceeds	\$13,500,000	\$11,500,000	\$1,400,000	\$0	\$0	\$0	\$0	\$0	\$0
653	Utility Provided Cash	\$2,200,000	\$500,000	\$1,000,000	\$400,000	\$0	\$0	\$0	\$0	\$0
654	Annual Bond Principal Payment	\$0	\$0	(\$2,098,921)	(\$2,203,867)	(\$2,314,060)	(\$2,429,763)	(\$3,101,062)		\$0
655	Total	\$130,010	(\$343)	(\$69,917)	\$58,164	(\$82,049)	\$357,084	\$578,155	\$4,581,782	
656										
657	Net Cash (Cumulative Cash less Bond)									
658	Cumulative Cash	\$130,010	\$129,667	\$59,750	\$117,914	\$35,865	\$392,949	\$2,819,611	\$16,480,965	
659	Bond Balance	\$0	(\$26,400,000)	(\$24,301,079)	(\$22,097,212)	(\$19,783,152)	(\$17,353,389)	(\$3,256,115)		\$0
660	Total Net Cash	N/A	(\$26,270,333)	(\$24,241,330)	(\$21,979,299)	(\$19,747,287)	(\$16,960,440)	(\$436,504)	\$16,480,965	
661										
662	Average Monthly Revenue (Residential)									
663	Per basic cable sub	N/A	N/A	\$37.51	\$44.72	\$46.45	\$47.77	\$50.11	\$52.07	
664	Per Internet subscriber	N/A	N/A	\$35.23	\$39.38	\$39.71	\$40.22	\$40.22	\$40.22	
665	Per telephone subscriber	N/A	N/A	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
666										
667	Indicator Summary									
668	Peak Negative Cumulative Cash	\$35,865								
669	Total Utility Cash Provided	\$4,100,000								
670	Years to Bond Payoff	12								
671	Cumulative Cash Year10	\$2,241,457								
672	Cumulative Cash Year15	\$16,480,965								
673	Net Cash Year10	(\$4,115,720)								
674	Net Cash Year15	\$16,480,965								
675										

Uptown FSN Model V1.2a May 3, 2002

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
2	Assumptions									
3										
4	Meter Statistics									
5	Residential Meter Growth		11.0%	11.0%	11.0%	11.0%	0.5%	0.5%	0.5%	0.5%
6	Residential Meters		40,615	41,021	41,431	41,846	42,264	42,475	43,548	44,426
7	Commercial Meter Growth		0.5%	0.5%	0.5%	0.5%	0.3%	0.3%	0.3%	0.3%
8	Commercial Meters		2,500	2,513	2,525	2,538	2,550	2,557	2,589	2,615
9										
10	Residential Penetrations									
11	Basic Telephone		16.0%	19.00%	23.0%	24.3%	25.0%	25.0%	25.0%	25.0%
12	Custom Calling		8.0%	9.5%	11.5%	12.2%	12.5%	12.5%	12.5%	12.5%
13	Long Distance		12.0%	14.3%	17.3%	18.3%	18.8%	18.8%	18.8%	18.8%
14	Internet Access		14.0%	16.3%	19.4%	20.5%	21.0%	21.0%	21.0%	21.0%
15	Basic Cable		14.0%	16.7%	20.2%	21.4%	22.0%	22.0%	22.0%	22.0%
16	Expanded Basic Cable % of Basic		90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%
17	Digital Cable % of Basic		25.0%	33.3%	44.4%	48.1%	50.0%	50.0%	50.0%	50.0%
18										
19	Premium Services									
20	Premium Services Growth		3.0%	2.0%	1.0%	1.0%				
21	HBO		30.0%	30.9%	31.5%	31.8%	32.2%	32.2%	32.2%	32.2%
22	Showtime		15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%
23	Cinemax		15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%
24	Starz		15.0%	15.5%	15.8%	15.9%	16.1%	16.1%	16.1%	16.1%
25										
26	Pay Per View Programming (PPV)									
27	Addressable Penetration		28%	37%	49%	53%	55%	55%	55%	55%
28	Movies		25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
29	Events		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
30	Adult		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
31										
32	Equipment Rental									
33	Analog Set Top Box (STB)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
34	Analog Remote Controls		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
35	Digital STBs		150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%
36	Digital Remote Controls		150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%	150.0%
37										
38	Commercial Penetrations									
39	Basic Telephone		10.0%	13.3%	16.5%	19.8%	23.0%	23.0%	23.0%	23.0%
40	Custom Calling		5.0%	6.6%	8.3%	9.9%	11.5%	11.5%	11.5%	11.5%
41	Long Distance		7.5%	9.9%	12.4%	14.8%	17.3%	17.3%	17.3%	17.3%
42	Internet Access		15.0%	15.5%	16.0%	16.5%	17.0%	17.0%	17.0%	17.0%
43										
44	Annual Churn by Market Segment									
45	Residential Churn		20.0%	18.8%	17.5%	16.3%	15.0%	15.0%	15.0%	15.0%
46	Business Churn		10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
47										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
48	Install Prices by Service									
49	Telephone		\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00
50	Internet Access		\$50.00	\$43.75	\$37.50	\$31.25	\$25.00	\$25.00	\$25.00	\$25.00
51	Cable		\$0.00	\$6.25	\$12.50	\$18.75	\$25.00	\$25.00	\$25.00	\$25.00
52										
53	Monthly Prices - Cable									
54	Annual Rate Increase			1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
55	Basic Cable		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
56	Expanded Basic Cable		\$20.00	\$20.20	\$20.40	\$20.61	\$20.81	\$21.02	\$22.09	\$22.99
57	Digital Cable		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
58	HBO		\$9.00	\$9.09	\$9.18	\$9.27	\$9.37	\$9.46	\$9.94	\$10.35
59	Showtime		\$10.00	\$10.10	\$10.20	\$10.30	\$10.41	\$10.51	\$11.05	\$11.49
60	Cinemax		\$7.00	\$7.07	\$7.14	\$7.21	\$7.28	\$7.36	\$7.73	\$8.05
61	Starz		\$8.00	\$8.08	\$8.16	\$8.24	\$8.32	\$8.41	\$8.84	\$9.20
62										
63	PPV Net Revenue per Buy									
64	Annual rate increase			1.0%	1.0%	1.0%	1.0%			
65	PPV - Movies		\$2.50	\$2.53	\$2.55	\$2.58	\$2.60	\$2.60	\$2.60	\$2.60
66	PPV - Events		\$15.00	\$15.15	\$15.30	\$15.45	\$15.61	\$15.61	\$15.61	\$15.61
67	PPV - Adult		\$6.00	\$6.06	\$6.12	\$6.18	\$6.24	\$6.24	\$6.24	\$6.24
68										
69	Monthly Prices Telephone and Internet									
70	Service Price Decline			0.0%	0.0%	0.0%	0.0%			
71	Basic Telephone - Residential		\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00
72	Basic Telephone - Commercial		\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
73	Custom Calling		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
74	Long Distance		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
75	Internet Access - Residential		\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00	\$40.00
76	Internet Access - Commercial		\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
77										
78	Equipment Rental									
79	Annual rate increase			1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
80	Analog Set Top Box (STB)		\$3.50	\$3.54	\$3.57	\$3.61	\$3.64	\$3.68	\$3.87	\$4.02
81	Analog Remote Controls		\$0.25	\$0.25	\$0.26	\$0.26	\$0.26	\$0.26	\$0.28	\$0.29
82	Digital STBs		\$5.00	\$5.05	\$5.10	\$5.15	\$5.20	\$5.26	\$5.52	\$5.75
83	Digital Remote Controls		\$0.25	\$0.25	\$0.26	\$0.26	\$0.26	\$0.26	\$0.28	\$0.29
84										
85	Misc. Revenues per Subscriber									
86	Ad sales		\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08
87	Cable guide		\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
88	Home shopping		\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
89	Late charges		\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
90	Other revenue		\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
91										

	A	B	D	E	F	G	H	I	N	R
1		Scenario = FTTH	2003	2004	2005	2006	2007	2008	2013	2017
92		Platform Expenses								
93		Basic Telephone Switch Generic Software	\$25,000							
94		Custom Calling Switch Generic Software	\$0							
95		Long Distance Switch Generic Software	\$0							
96		Internet Access Platform Expenses	\$50,000							
97		Cable Television Platform Expenses	\$50,000							
98										
99		Support System Expenses								
100		Basic Telephone Support System Expenses	\$25,000							
101		Custom Calling Support System Expenses	\$0							
102		Long Distance Support System Expenses	\$0							
103		Internet Access Support System Expenses	\$50,000							
104		Basic Cable Support System Expenses	\$100,000							
105										
106		Third Party Expenses								
107		Basic telephone fees per sub.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
108		Long distance fees per subscriber	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
109		Internet access fees per sub.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
110										
111		Programming Costs								
112		Programming Rate Increase	10%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
113		Basic cable programming fees per sub.	\$1.00	\$1.01	\$1.02	\$1.03	\$1.04	\$1.05	\$1.10	\$1.15
114		Expanded cable programming fees per sub.	\$13.00	\$13.13	\$13.26	\$13.39	\$13.53	\$13.66	\$14.36	\$14.94
115		Digital cable programming fees per sub.	\$6.50	\$6.57	\$6.63	\$6.70	\$6.76	\$6.83	\$7.18	\$7.47
116		HBO programming fees per sub.	\$6.00	\$6.06	\$6.12	\$6.18	\$6.24	\$6.31	\$6.63	\$6.90
117		Showtime programming fees per sub.	\$5.00	\$5.05	\$5.10	\$5.15	\$5.20	\$5.26	\$5.52	\$5.75
118		Cinemax programming fees per sub.	\$4.35	\$4.39	\$4.44	\$4.48	\$4.53	\$4.57	\$4.81	\$5.00
119		Starz programming fees per sub.	\$4.35	\$4.39	\$4.44	\$4.48	\$4.53	\$4.57	\$4.81	\$5.00
120										
121		ILEC Interconnection Expenses								
122		Residential subs per ILEC access line	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
123		Commercial subs per ILEC access line	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
124		Cost per ILEC access line per month	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
125										
126		Internet Access Engineering								
127		Bandwidth per residential sub (kbps)	150	188	225	263	300	300	300	300
128		Bandwidth per commercial sub (kbps)	250	313	375	438	500	500	500	500
129		Residential overbooking ratio	10	10	10	10	10	10	10	10
130		Commercial overbooking ratio	10	10	10	10	10	10	10	10
131										
132		Internet Backbone Charges								
133		Internet backbone cost decline	2.5%	2.5%	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%
134		100 Mbps access per month	\$37,400	\$36,465	\$35,553	\$34,665	\$33,798	\$33,798	\$33,798	\$33,798
135		10 Mbps access per month	\$3,745	\$3,651	\$3,560	\$3,471	\$3,384	\$3,384	\$3,384	\$3,384
136		2 Mbps access per month	\$750	\$731	\$713	\$695	\$678	\$678	\$678	\$678
137										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
138	Staffing Requirements (Headcount)									
139	General Manager		0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
140	Network Engineer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
141	Field Service Supervisor		0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
142	Customer Service Supervisor		0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
143	Marketing/PR Coordinator		0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
144	Customer Service Reps		1.7	3.9	4.7	4.9	5.0	5.0	5.0	5.0
145	Installers		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
146	Field Technicians		2.3	5.3	6.7	7.4	8.0	8.0	8.0	8.0
147	Headend Technicians		0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
148	Data Technician		0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
149										
150	Annual Compensation (Unloaded)									
151	Annual Increase		3.0%	3.0%	3.0%	3.0%	3.0%	1.5%	1.5%	1.5%
152	General Manager		\$120,000	\$123,600	\$127,308	\$131,127	\$135,061	\$137,087	\$147,682	\$156,744
153	Network Engineer		\$75,000	\$77,250	\$79,568	\$81,955	\$84,413	\$85,679	\$92,301	\$97,965
154	Field Service Supervisor		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
155	Customer Service Supervisor		\$50,000	\$51,500	\$53,045	\$54,636	\$56,275	\$57,120	\$61,534	\$65,310
156	Marketing/PR Coordinator		\$80,000	\$82,400	\$84,872	\$87,418	\$90,041	\$91,391	\$98,454	\$104,496
157	Customer Service Reps		\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$45,696	\$49,227	\$52,248
158	Installers		\$24,000	\$24,720	\$25,462	\$26,225	\$27,012	\$27,417	\$29,536	\$31,349
159	Field Technicians		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
160	Headend Technicians		\$60,000	\$61,800	\$63,654	\$65,564	\$67,531	\$68,543	\$73,841	\$78,372
161	Data Technician		\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$114,239	\$123,068	\$130,620
162										
163	Allocated Building Costs (e.g. Rent, Utilities, Etc.)									
164	Annual Building Cost Increase		3.0%	3.0%	3.0%	3.0%	3.0%			
165	Building Monthly Expense		\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,126	\$1,126	\$1,126
166	Building Monthly Capital		\$500	\$485	\$470	\$456	\$443	\$443	\$443	\$443
167										
168	Tele-Sales Channel Expense									
169	Sales per Sales Rep per Month		300	475	650	825	\$1,000	1,000	1,000	1,000
170	Base Salary & Annual Increase		\$50,000	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
171	Base salary per Sales Rep (loaded)		\$80,000	\$82,400	\$84,872	\$87,418	\$90,041	\$92,742	\$107,513	\$121,007
172	Product training per sales rep		\$1,000	\$500	\$500	\$500	\$500	\$500	\$500	\$500
173										
174	Marketing									
175	Direct marketing budget per feature		\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00
176										
177	Customer Service									
178	Cost per minute for customer service		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
179	Calls per Internet Access sub per year		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180	Minutes per Internet Access call		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
181										
182	Billing Costs									
183	Cost per subscriber bill per month		\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50	\$1.50
184										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
185	Meters Passed									
186	% Residential meters passed		50%	100%	100%	100%	100%	100%	100%	100%
187	% Commercial meters passed		50%	100%	100%	100%	100%	100%	100%	100%
188										
189	Outside Plant Construction Costs									
190	Blended Cost per meter passed		\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650
191										
192	Fixed Equipment Capital									
193	Telephone switch capital		\$0							
194	Cable headend capital		\$1,500,000							
195	Internet access capital		\$250,000							
196	Test equipment		\$150,000							
197										
198	Annual Vendor Maintenance as % of Fixed Capital									
199	Telephone		5%							
200	Cable		5%							
201	Internet		5%							
202										
203	Vehicle Capital									
204	Bucket Trucks		\$150,000							
205	Pick-Up Trucks		\$100,000							
206										
207	Service Drop Installation Labor									
208	Labor cost increase		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
209	Service drop installation labor		\$300	\$315	\$331	\$347	\$365	\$383	\$489	\$594
210	CAT5 Inside Wiring (high speed Internet only)		\$100	\$105	\$110	\$116	\$122	\$122	\$122	\$122
211										
212	Service Drop Materials									
213	Materials cost decline		20.0%	10.0%	7.5%	5.0%	5.0%	5.0%	5.0%	5.0%
214	NIU, drop enclosure and fiber drop		\$838	\$796	\$756	\$718	\$683	\$648	\$502	\$409
215										
216	Variable Capital									
217	Annual cost decline		15.0%	10.0%	7.5%	5.0%	5.0%	5.0%	5.0%	5.0%
218	Telephone CPE		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
219	Analog STB & Remote Capital		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
220	Digital STB & Remote Capital		\$250	\$213	\$191	\$177	\$168	\$160	\$124	\$101
221	Variable capital per churned subscriber		10%	10%	10%	10%	10%	10%	10%	10%
222										
223	Financial									
224	Utility provided cash		\$3,000,000	\$700,000	\$300,000	\$100,000	\$0			
225	Discount Rate		5%							
226	Salary Overhead Loading		60%							
227	Engineering Furnish & Install Loading (EF&I)		5%							
228	Bond Anticipation Note (BAN) Rate		3.5%							
229	Billable Months - Year1		3.30							
230	Billable Months - Year2		10.45							
231	Bond Term		20							
232	Bond Rate		5.0%							
233										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
34	Revenue									
35										
36	Addressable Market Size									
37	Residential Meters Passed		20,308	34,184	41,431	41,846	42,264	42,475	43,548	44,426
38	Commercial Meters Passed		1,250	2,094	2,525	2,538	2,550	2,557	2,589	2,615
39										
40	Local Residential Penetrations									
41	Basic Telephone		16.0%	19.0%	23.0%	24.3%	25.0%	25.0%	25.0%	25.0%
42	Custom Calling		8.0%	9.5%	11.5%	12.2%	12.5%	12.5%	12.5%	12.5%
43	Long Distance		12.0%	14.3%	17.3%	18.3%	18.8%	18.8%	18.8%	18.8%
44	Internet Access		14.0%	16.3%	19.4%	20.5%	21.0%	21.0%	21.0%	21.0%
45	Basic Cable		14.0%	16.7%	20.2%	21.4%	22.0%	22.0%	22.0%	22.0%
46	Expanded Basic Cable		12.6%	15.0%	18.2%	19.3%	19.8%	19.8%	19.8%	19.8%
47	Digital Cable		3.50%	5.56%	8.99%	10.31%	11.00%	11.00%	11.00%	11.00%
48										
49	Residential Churn									
50	Basic Telephone		0	650	1218	1668	1655	1585	1625	1658
51	Custom Calling		0	325	609	834	827	792	812	829
52	Long Distance		0	487	913	1251	1241	1189	1219	1243
53	Internet Access		0	569	1047	1410	1393	1331	1365	1392
54	Basic Cable		0	569	1068	1466	1456	1395	1430	1459
55	Expanded Basic		0	512	961	1320	1310	1255	1287	1313
56	Digital Cable		0	142	356	652	701	697	715	729
57										
58	Residential Sub Additions									
59	Basic Telephone		3,249	3,896	4,252	2,321	2,038	1,638	1,679	1,713
60	Custom Calling		1,625	1,948	2,126	1,160	1,019	819	840	856
61	Long Distance		2,437	2,922	3,189	1,741	1,529	1,228	1,259	1,285
62	Internet Access		2,843	3,309	3,520	1,924	1,698	1,376	1,410	1,439
63	Basic Cable		2,843	3,423	3,749	2,046	1,796	1,441	1,478	1,507
64	Expanded Basic		2,559	1,331	2,181	1,241	1,037	721	739	754
65	Digital Cable		711	1,331	2,181	1,241	1,037	721	739	754
66										
67	Residential Subs (at end of period)									
68	Basic Telephone		3,249	6,495	9,529	10,182	10,566	10,619	10,887	11,106
69	Custom Calling		1,625	3,248	4,765	5,091	5,283	5,309	5,444	5,553
70	Long Distance		2,437	4,871	7,147	7,637	7,925	7,964	8,165	8,330
71	Internet Access		2,843	5,583	8,056	8,571	8,875	8,920	9,145	9,329
72	Basic Cable		2,843	5,697	8,378	8,958	9,298	9,345	9,581	9,774
73	Expanded Basic		2,559	5,128	7,541	8,062	8,368	8,410	8,623	8,796
74	Digital Cable		711	1,899	3,724	4,313	4,649	4,672	4,790	4,887
75	HBO		853	1,760	2,641	2,852	2,989	3,004	3,080	3,142
76	Showtime		426	880	1,320	1,426	1,495	1,502	1,540	1,571
77	Cinemax		426	880	1,320	1,426	1,495	1,502	1,540	1,571
78	Starz		426	880	1,320	1,426	1,495	1,502	1,540	1,571
79										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
280	Average Residential Subs									
281	Basic Telephone		1,625	4,872	8,012	9,856	10,374	10,592	10,860	11,079
282	Custom Calling		812	2,436	4,006	4,928	5,187	5,296	5,430	5,539
283	Long Distance		1,218	3,654	6,009	7,392	7,781	7,944	8,145	8,309
284	Internet Access		1,422	4,213	6,820	8,313	8,723	8,898	9,122	9,306
285	Basic Cable		1,422	4,270	7,038	8,668	9,128	9,321	9,557	9,749
286	Expanded Basic		1,279	3,843	6,334	7,801	8,215	8,389	8,601	8,774
287	Digital Cable		355	1,305	2,811	4,018	4,481	4,661	4,778	4,875
288	HBO		426	1,307	2,201	2,746	2,921	2,997	3,073	3,135
289	Showtime		213	653	1,100	1,373	1,460	1,498	1,536	1,567
290	Cinemax		213	653	1,100	1,373	1,460	1,498	1,536	1,567
291	Starz		213	653	1,100	1,373	1,460	1,498	1,536	1,567
292										
293	PPV Services									
294	Movies		1,173	4,697	10,322	13,773	15,061	15,380	15,769	16,086
295	Events		141	564	1,239	1,653	1,807	1,846	1,892	1,930
296	Adult		0	0	0	0	0	0	0	0
297										
298	Equipment									
299	Analog Set Top Box (STB)		0	0	0	0	0	0	0	0
300	Analog Remote Controls		0	0	0	0	0	0	0	0
301	Digital STBs		533	1,957	4,217	6,028	6,722	6,991	7,168	7,312
302	Digital Remote Controls		533	1,957	4,217	6,028	6,722	6,991	7,168	7,312
303										
304	Commercial Penetrations									
305	Basic Telephone		10.0%	13.3%	16.5%	19.8%	23.0%	23.0%	23.0%	23.0%
306	Custom Calling		5.0%	6.6%	8.3%	9.9%	11.5%	11.5%	11.5%	11.5%
307	Long Distance		7.5%	9.9%	12.4%	14.8%	17.3%	17.3%	17.3%	17.3%
308	Internet Access		15.0%	15.5%	16.0%	16.5%	17.0%	17.0%	17.0%	17.0%
309										
310	Commercial Churn									
311	Basic Telephone		0	13	16	17	13	14	6	6
312	Custom Calling		0	6	8	8	6	7	3	3
313	Long Distance		0	9	12	13	9	10	5	5
314	Internet Access		0	19	16	11	6	6	4	5
315										
316	Commercial Sub Additions									
317	Basic Telephone		125	165	167	126	136	60	61	61
318	Custom Calling		63	82	83	63	68	30	30	31
319	Long Distance		94	124	125	95	102	45	46	46
320	Internet Access		188	156	112	55	57	44	45	45
321										

A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH	2003	2004	2005	2006	2007	2008	2013	2017
322	Commercial Subs (at end of period)								
323	Basic Telephone	125	277	417	501	587	588	595	601
324	Custom Calling	63	139	208	251	293	294	298	301
325	Long Distance	94	208	312	376	440	441	447	451
326	Internet Access	188	325	404	419	434	435	440	445
327									
328	Average Commercial Subs								
329	Basic Telephone	63	201	347	459	544	587	595	601
330	Custom Calling	31	101	174	229	272	294	297	300
331	Long Distance	47	151	260	344	408	440	446	451
332	Internet Access	94	256	364	411	426	434	440	444
333									
334	Residential Install Revenues by Service								
335	Telephone	\$64,984	\$97,391	\$106,300	\$58,021	\$50,956	\$40,943	\$41,977	\$42,823
336	Internet Access	\$113,722	\$144,769	\$131,983	\$60,135	\$42,439	\$34,392	\$35,261	\$35,971
337	Cable	\$0	\$21,393	\$46,865	\$38,361	\$44,893	\$36,030	\$36,940	\$37,684
338	Total	\$178,706	\$263,553	\$285,149	\$156,518	\$138,288	\$111,366	\$114,178	\$116,479
339									
340	Residential Monthly Revenues by Service								
341	Basic Telephone	\$80,418	\$763,703	\$1,442,181	\$1,774,049	\$1,867,363	\$1,906,641	\$1,954,788	\$1,994,176
342	Custom Calling	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
343	Long Distance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
344	Internet Access	\$187,641	\$1,761,135	\$3,273,488	\$3,990,411	\$4,187,060	\$4,270,875	\$4,378,720	\$4,466,953
345	Basic Cable	\$46,910	\$450,700	\$861,519	\$1,071,704	\$1,139,847	\$1,175,620	\$1,266,789	\$1,344,789
346	Expanded Basic Cable	\$84,439	\$811,260	\$1,550,734	\$1,929,067	\$2,051,725	\$2,116,117	\$2,280,220	\$2,420,620
347	Digital Cable	\$11,728	\$137,730	\$344,151	\$496,823	\$559,566	\$587,810	\$633,395	\$672,394
348	HBO	\$12,666	\$124,124	\$242,441	\$305,572	\$328,228	\$340,182	\$366,563	\$389,133
349	Showtime	\$7,037	\$68,958	\$134,689	\$169,762	\$182,349	\$188,990	\$203,646	\$216,185
350	Cinemax	\$4,926	\$48,271	\$94,282	\$118,834	\$127,644	\$132,293	\$142,552	\$151,329
351	Starz	\$5,629	\$55,166	\$107,751	\$135,810	\$145,879	\$151,192	\$162,917	\$172,948
352	Total	\$441,393	\$4,221,048	\$8,051,236	\$9,992,032	\$10,589,662	\$10,869,720	\$11,389,587	\$11,828,527
353									
354	PPV Revenue				\$46.45				
355	Movies	\$2,932	\$11,861	\$26,324	\$35,475	\$39,182	\$40,012	\$41,022	\$41,849
356	Events	\$2,111	\$8,540	\$18,953	\$25,542	\$28,211	\$28,809	\$29,536	\$30,131
357	Adult	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
358	Total	\$5,043	\$20,400	\$45,278	\$61,018	\$67,393	\$68,820	\$70,558	\$71,980
359									
360	Equipment Rental								
361	Analog Set Top Box (STB)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
362	Analog Remote Controls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
363	Digital STBs	\$8,796	\$103,298	\$258,113	\$372,617	\$419,675	\$440,858	\$475,046	\$504,296
364	Digital Remote Controls	\$440	\$5,165	\$12,906	\$18,631	\$20,984	\$22,043	\$23,752	\$25,215
365	Total	\$9,235	\$108,463	\$271,019	\$391,248	\$440,658	\$462,901	\$498,798	\$529,511
366									

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
367	Misc. Revenues per Subscriber									
368	Ad sales		\$375	\$3,570	\$6,756	\$8,321	\$8,763	\$8,949	\$9,174	\$9,359
369	Cable guide		\$47	\$446	\$845	\$1,040	\$1,095	\$1,119	\$1,147	\$1,170
370	Home shopping		\$704	\$6,694	\$12,668	\$15,603	\$16,431	\$16,778	\$17,202	\$17,549
371	Late charges		\$2,346	\$22,312	\$42,227	\$52,009	\$54,769	\$55,928	\$57,340	\$58,496
372	Other revenue		\$563	\$5,355	\$10,135	\$12,482	\$13,144	\$13,423	\$13,762	\$14,039
373	Total		\$4,034	\$38,376	\$72,631	\$89,456	\$94,202	\$96,196	\$98,625	\$100,613
374										
375	Commercial Install Revenues by Service									
376	Basic Telephone		\$2,500	\$4,123	\$4,174	\$3,156	\$3,388	\$1,503	\$1,522	\$1,537
377	Internet Access		\$7,500	\$3,608	\$4,197	\$1,722	\$1,418	\$1,111	\$1,125	\$1,136
378	Total		\$10,000	\$7,731	\$8,371	\$4,878	\$4,806	\$2,614	\$2,647	\$2,674
379										
380	Commercial Monthly Revenues by Service									
381	Basic Telephone		\$4,125	\$42,053	\$83,287	\$110,139	\$130,534	\$140,957	\$142,728	\$144,160
382	Custom Calling		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
383	Long Distance		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
384	Internet Access		\$12,375	\$107,015	\$327,844	\$370,228	\$383,527	\$390,695	\$395,603	\$399,574
385	Total		\$16,500	\$149,068	\$411,130	\$480,367	\$514,061	\$531,652	\$538,331	\$543,735
386										
387	Total Residential Services									
388	Installation		\$178,706	\$263,553	\$285,149	\$156,518	\$138,288	\$111,366	\$114,178	\$116,479
389	Monthly		\$441,393	\$4,221,048	\$8,051,236	\$9,992,032	\$10,589,662	\$10,869,720	\$11,389,587	\$11,828,527
390	PPV		\$5,043	\$20,400	\$45,278	\$61,018	\$67,393	\$68,820	\$70,558	\$71,980
391	Equipment Rental		\$9,235	\$108,463	\$271,019	\$391,248	\$440,658	\$462,901	\$498,798	\$529,511
392	Misc Revenue		\$4,034	\$38,376	\$72,631	\$89,456	\$94,202	\$96,196	\$98,625	\$100,613
393	Total		\$638,411	\$4,651,840	\$8,725,312	\$10,690,271	\$11,330,204	\$11,609,003	\$12,171,747	\$12,647,109
394										
395	Total Commercial									
396	Install		\$10,000	\$7,731	\$8,371	\$4,878	\$4,806	\$2,614	\$2,647	\$2,674
397	Monthly		\$16,500	\$149,068	\$411,130	\$480,367	\$514,061	\$531,652	\$538,331	\$543,735
398	Total		\$26,500	\$156,798	\$419,502	\$485,245	\$518,866	\$534,266	\$540,978	\$546,408
399										
400	Total Revenue									
401	Residential		\$638,411	\$4,651,840	\$8,725,312	\$10,690,271	\$11,330,204	\$11,609,003	\$12,171,747	\$12,647,109
402	Commercial		\$26,500	\$156,798	\$419,502	\$485,245	\$518,866	\$534,266	\$540,978	\$546,408
403	Total		\$664,911	\$4,808,639	\$9,144,814	\$11,175,516	\$11,849,071	\$12,143,269	\$12,712,725	\$13,193,517
404										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
405	Expenses									
406										
407	Platform Expenses									
408	Basic Telephone Switch Generic Software		\$25,000							
409	Custom Calling Switch Generic Software		\$0							
410	Long Distance Switch Generic Software		\$0							
411	Internet Access Platform Expenses		\$50,000							
412	Cable Television Platform Expenses		\$50,000							
413	Total Platform Expenses		\$125,000							
414										
415	Support System Expenses									
416	Basic Telephone Support System Expenses		\$25,000							
417	Custom Calling Support System Expenses		\$0							
418	Long Distance Support System Expenses		\$0							
419	Internet Access Support System Expenses		\$50,000							
420	Cable Support System Expenses		\$100,000							
421	Total Support System Expenses		\$175,000							
422										
423	Third Party Expenses									
424	Basic telephone fees		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
425	Long distance fees		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
426	Internet access fees		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
427	Total Third Party Expenses		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
428										
429	Programming Fees									
430	Basic cable programming fees		\$4,691	\$45,070	\$86,152	\$107,170	\$113,985	\$117,562	\$126,679	\$134,479
431	Expanded cable programming fees		\$54,885	\$527,319	\$1,007,977	\$1,253,893	\$1,333,622	\$1,375,476	\$1,482,143	\$1,573,403
432	Digital cable programming fees		\$7,623	\$89,525	\$223,698	\$322,935	\$363,718	\$382,077	\$411,706	\$437,056
433	HBO programming fees		\$8,444	\$82,750	\$161,627	\$203,715	\$218,819	\$226,788	\$244,375	\$259,422
434	Showtime programming fees		\$3,518	\$34,479	\$67,345	\$84,881	\$91,174	\$94,495	\$101,823	\$108,092
435	Cinemax programming fees		\$3,061	\$29,997	\$58,590	\$73,847	\$79,322	\$82,211	\$88,586	\$94,040
436	Starz programming fees		\$3,061	\$29,997	\$58,590	\$73,847	\$79,322	\$82,211	\$88,586	\$94,040
437	Total Programming fees		\$85,283	\$839,136	\$1,663,978	\$2,120,288	\$2,279,961	\$2,360,819	\$2,543,899	\$2,700,533
438										
439	Network Facilities Expenses									
440	ILEC access trunks required		325	650	953	1018	1057	1062	1089	1111
441	ILEC Interconnection facilities		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
442	End of Year Bandwidth Requirement		42,646	104,689	181,262	224,979	266,264	267,595	274,352	279,881
443	Average annual bandwidth requirement		21,323	73,668	142,976	203,120	245,621	266,930	273,670	279,185
444	100 Mbps connections required		1.00	1.00	2.00	3.00	3.00	3.00	3.00	3.00
445	10 Mbps connections required		3.00	8.00	19.00	23.00	27.00	27.00	28.00	28.00
446	2 Mbps connections required		11.00	37.00	91.00	113.00	134.00	134.00	138.00	140.00
447	100 Mbps cost		\$374,000	\$492,278	\$853,281	\$1,247,923	\$1,216,725	\$1,216,725	\$1,216,725	\$1,216,725
448	10 Mbps cost		\$112,350	\$394,349	\$811,701	\$958,020	\$1,096,517	\$1,096,517	\$1,137,129	\$1,137,129
449	2 Mbps cost		\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,138,647
450	Minimum Internet backbone Charges		\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129
451	Total Network Facilities Charges		\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129
452										
453	Monthly cost per residential Internet sub		\$9.67	\$7.22	\$9.51	\$9.45	\$10.41	\$10.21	\$10.25	\$10.18

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
454										
455	Staffing Expenses									
456	General Manager		\$172,800	\$197,760	\$203,693	\$209,804	\$216,098	\$219,339	\$236,291	\$250,790
457	Network Engineer		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
458	Field Service Supervisor		\$76,800	\$98,880	\$101,846	\$104,902	\$108,049	\$109,670	\$118,145	\$125,395
459	Customer Service Supervisor		\$64,000	\$82,400	\$84,872	\$87,418	\$90,041	\$91,391	\$98,454	\$104,496
460	Marketing/PR Coordinator		\$102,400	\$131,840	\$135,795	\$139,869	\$144,065	\$146,226	\$157,527	\$167,193
461	Customer Service Reps		\$108,800	\$257,088	\$318,149	\$343,393	\$360,163	\$365,565	\$393,818	\$417,984
462	Installers		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
463	Field Technicians		\$220,800	\$524,064	\$684,515	\$775,663	\$864,391	\$877,357	\$945,162	\$1,003,161
464	Headend Technicians		\$67,200	\$98,880	\$101,846	\$104,902	\$108,049	\$109,670	\$118,145	\$125,395
465	Data Technician		\$112,000	\$164,800	\$169,744	\$174,836	\$180,081	\$182,783	\$196,909	\$208,992
466	Total Staffing Expense		\$924,800	\$1,555,712	\$1,800,461	\$1,940,787	\$2,070,936	\$2,102,000	\$2,264,451	\$2,403,406
467										
468	Staffing Ratios									
469	Basic Cable Subs per Customer Service Rep		1,672	1,461	1,788	1,824	1,860	1,869	1,916	1,955
470	Basic Cable Subs per Field Technician		1,236	1,075	1,247	1,212	1,162	1,168	1,198	1,222
471										
472	Allocated Building Expense									
473	Site 1 Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
474	Total Allocated Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
475										
476	Sales Channel Expense									
477	Sales Reps required		5	4	3	2	1	1	1	1
478	Sales Rep salary		\$400,000	\$329,600	\$254,616	\$174,836	\$90,041	\$92,742	\$107,513	\$121,007
479	Total Sales Channel Expense		\$400,000	\$329,600	\$254,616	\$174,836	\$90,041	\$92,742	\$107,513	\$121,007
480										
481	Marketing Expenses									
482	Direct marketing cost		\$836,753	\$934,253	\$1,084,236	\$600,673	\$525,727	\$406,137	\$416,278	\$424,574
483	Total Marketing Expenses		\$836,753	\$934,253	\$1,084,236	\$600,673	\$525,727	\$406,137	\$416,278	\$424,574
484										
485	Customer Service Expenses									
486	Internet Access CS minutes		0	0	0	0	0	0	0	0
487	Cost		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
488	Total Customer Service		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
489										
490	Billing Costs									
491	Subscriber bills		1,625	4,872	8,012	9,856	10,374	10,592	10,860	11,079
492	Billing cost		\$29,243	\$87,698	\$144,218	\$177,405	\$186,736	\$190,664	\$195,479	\$199,418
493	Total Billing Cost		\$29,243	\$87,698	\$144,218	\$177,405	\$186,736	\$190,664	\$195,479	\$199,418
494										
495	Vendor Maintenance									
496	Telephone		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
497	Cable		\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
498	Internet		\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500
499	Total Vendor Maintenance		\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500
500										
501										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH	2003	2004	2005	2006	2007	2008	2013	2017	
502	Capital Expenditures									
503										
504	Total Meters Passed									
505	Residential Meters Passed	20,308	41,021	41,431	41,846	42,264	42,475	43,548	44,426	
506	Commercial Meters Passed	1,250	2,513	2,525	2,538	2,550	2,557	2,589	2,615	
507	Total Meters Passed	21,558	43,534	43,956	44,383	44,815	45,032	46,137	47,040	
508										
509	Network Construction Costs									
510	New meters passed	21,558	21,976	423	427	431	218	223	228	
511	Construction costs	\$14,012,375	\$14,284,498	\$274,803	\$277,510	\$280,244	\$141,503	\$145,023	\$147,903	
512	Total Annual Network Construction Cost	\$14,012,375	\$14,284,498	\$274,803	\$277,510	\$280,244	\$141,503	\$145,023	\$147,903	
513										
514	Cumulative Network Construction Costs	\$14,012,375	\$28,296,873	\$28,571,676	\$28,849,186	\$29,129,430	\$29,270,933	\$29,988,974	\$30,576,249	
515										
516	Fixed Equipment Capital									
517	Telephone switch capital	\$0								
518	Cable headend capital	\$1,500,000								
519	Internet access capital	\$250,000								
520	Test equipment	\$150,000								
521	Total Fixed Capital	\$1,900,000								
522										
523	Vehicle Capital									
524	Bucket Trucks	\$150,000								
525	Pick-Up Trucks	\$100,000								
526	Total Vehicle Capital	\$250,000								
527										
528	New Variable Capital Requirements									
529	Net new residential telephone subscribers	3,249	3,311	3,156	820	549	211	217	221	
530	Net new residential Internet subscribers	2,843	2,797	2,577	655	444	178	182	186	
531	Net new residential cable subscribers	2,843	2,911	2,788	726	486	186	191	194	
532	Net new commercial telephone subscribers	125	154	152	111	124	48	55	56	
533	Net new commercial Internet subscribers	188	139	98	45	52	39	41	41	
534										
535	Variable Equipment Capital									
536	New service drops	3,437	3,464	3,308	931	673	259	272	277	
537	New telephone subs	3,374	3,464	3,308	931	673	259	272	277	
538	New Internet subs	3,031	2,936	2,675	701	496	217	223	227	
539	New cable subs	2,843	2,911	2,788	726	486	186	191	194	
540	Service drop installation labor	\$1,031,010	\$1,091,308	\$1,094,151	\$323,391	\$245,485	\$99,263	\$132,953	\$164,529	
541	NIU, drop enclosure and fiber drop (materials)	\$2,879,955	\$2,758,086	\$2,501,893	\$669,043	\$459,499	\$168,105	\$136,510	\$113,199	
542	CAT5 Inside Wiring	\$303,055	\$308,296	\$294,948	\$81,096	\$60,275	\$26,358	\$27,100	\$27,595	
543	Analog STB & Remote Capital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
544	Digital STB & Remote Capital	\$266,536	\$309,314	\$355,443	\$92,803	\$61,208	\$22,268	\$17,665	\$14,679	
545	Total Annual Variable Capital	\$4,480,556	\$4,466,984	\$4,246,435	\$1,166,332	\$826,467	\$315,993	\$314,228	\$320,002	
546										
547	Allocated Building Capital									
548	Annual building Capital	\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312	
549	Total Allocated Building Capital	\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312	
550										

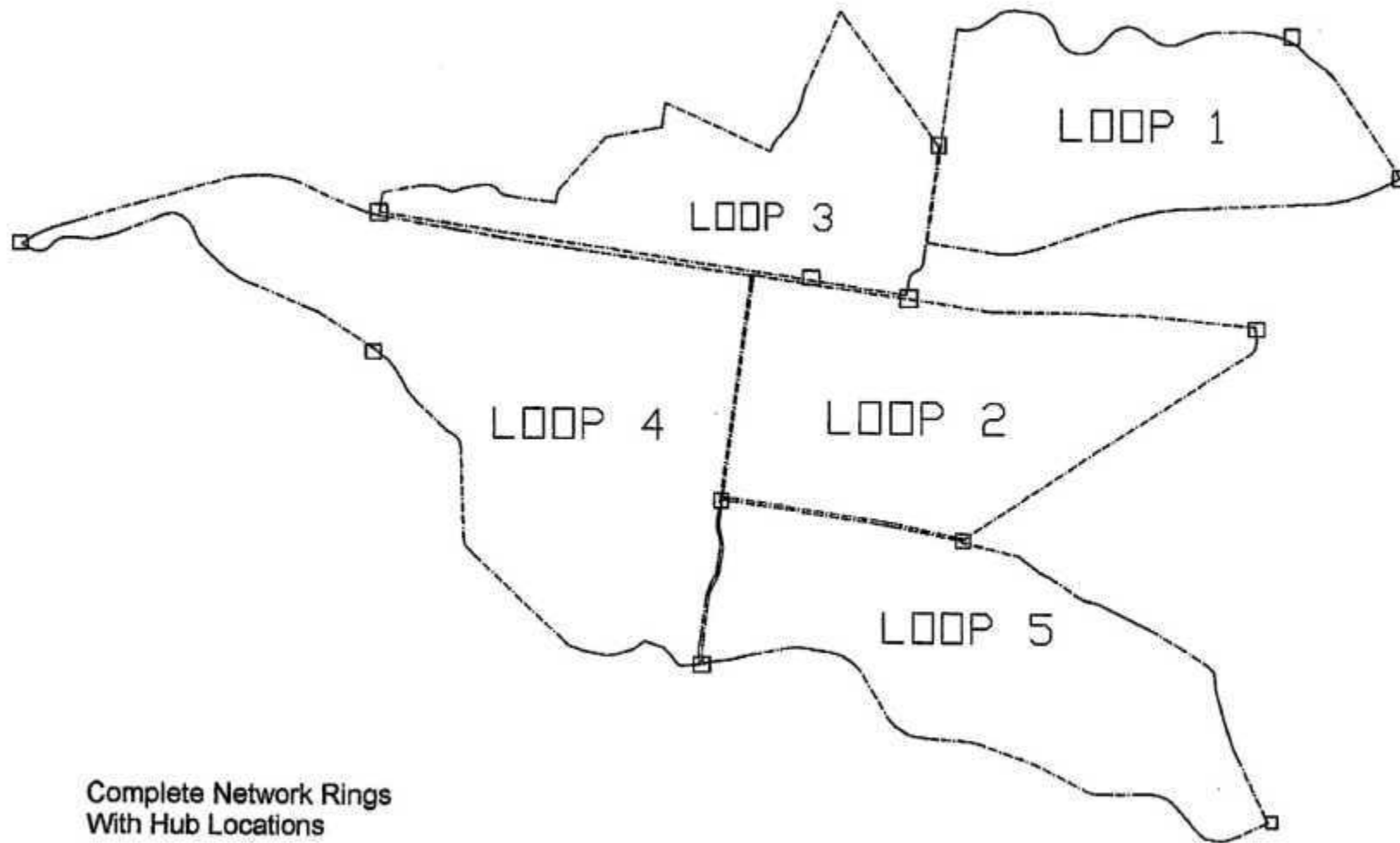
	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
551	EF&I									
552	EF&I		\$1,032,447	\$937,865	\$226,344	\$72,466	\$55,601	\$23,140	\$23,228	\$23,661
553	Total EF&I		\$1,032,447	\$937,865	\$226,344	\$72,466	\$55,601	\$23,140	\$23,228	\$23,661
554										
555	Capital Expenditure Summary									
556	Network Construction		\$14,012,375	\$14,284,498	\$274,803	\$277,510	\$280,244	\$141,503	\$145,023	\$147,903
557	Fixed Equipment		\$1,900,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
558	Vehicles		\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
559	Variable Capital		\$4,480,556	\$4,466,984	\$4,246,435	\$1,166,332	\$826,467	\$315,993	\$314,228	\$320,002
560	Building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
561	EF&I Loading		\$1,032,447	\$937,865	\$226,344	\$72,466	\$55,601	\$23,140	\$23,228	\$23,661
562	Total Annual Capital Expenditures		\$21,681,377	\$19,695,167	\$4,753,228	\$1,521,784	\$1,167,624	\$485,948	\$487,791	\$496,878
563										
564	Cumulative Capital Expenditures		\$21,681,377	\$41,376,544	\$46,129,772	\$47,651,556	\$48,819,180	\$49,305,128	\$51,747,902	\$53,717,941
565										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
566	Proforma									
567										
568	Total Revenues									
569	Residential		\$638,411	\$4,651,840	\$8,725,312	\$10,690,271	\$11,330,204	\$11,609,003	\$12,171,747	\$12,647,109
570	Commercial		\$26,500	\$156,798	\$419,502	\$485,245	\$518,866	\$534,266	\$540,978	\$546,408
571	Total Revenues		\$664,911	\$4,808,639	\$9,144,814	\$11,175,516	\$11,849,071	\$12,143,269	\$12,712,725	\$13,193,517
572										
573	Operating Expenses									
574	Platform expenses		\$125,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
575	Support system expenses		\$175,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
576	Third party expenses		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
577	Programming fees		\$85,283	\$839,136	\$1,663,978	\$2,120,288	\$2,279,961	\$2,360,819	\$2,543,899	\$2,700,533
578	Network facilities expenses		\$82,500	\$365,259	\$778,562	\$942,616	\$1,089,848	\$1,089,848	\$1,122,380	\$1,137,129
579	Staffing expenses		\$649,600	\$1,084,384	\$1,261,645	\$1,370,107	\$1,476,668	\$1,498,818	\$1,614,652	\$1,713,733
580	Allocated Building Expense		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,506	\$13,506	\$13,506
581	Vendor Maintenance		\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500	\$87,500
582	Total Operating Expense		\$1,216,883	\$2,388,639	\$3,804,416	\$4,533,623	\$4,947,482	\$5,050,490	\$5,381,937	\$5,652,401
583										
584	SG&A									
585	Sales Channel Expense		\$400,000	\$329,600	\$254,616	\$174,836	\$90,041	\$92,742	\$107,513	\$121,007
586	Marketing Expenses		\$939,153	\$1,016,653	\$1,169,108	\$688,091	\$615,767	\$497,528	\$514,733	\$529,070
587	Customer Service Expenses		\$172,800	\$339,488	\$403,021	\$430,811	\$450,204	\$456,957	\$492,272	\$522,480
588	Billing Expenses		\$29,243	\$87,698	\$144,218	\$177,405	\$186,736	\$190,664	\$195,479	\$199,418
589	Total SG&A		\$1,541,196	\$1,773,438	\$1,970,963	\$1,471,144	\$1,342,748	\$1,237,891	\$1,309,997	\$1,371,975
590										
591	Total Expense		\$2,758,079	\$4,162,078	\$5,775,379	\$6,004,767	\$6,290,230	\$6,288,381	\$6,691,934	\$7,024,376
592										
593	Operating Income		(\$2,093,167)	\$646,561	\$3,369,435	\$5,170,750	\$5,558,841	\$5,854,889	\$6,020,791	\$6,169,142
594										
595	Operating Margin		-315%	13%	37%	46%	47%	48%	47%	47%
596										
597	Capital									
598	Network Construction		\$14,012,375	\$14,284,498	\$274,803	\$277,510	\$280,244	\$141,503	\$145,023	\$147,903
599	Fixed Equipment		\$1,900,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
600	Vehicles		\$250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
601	Variable Capital		\$4,480,556	\$4,466,984	\$4,246,435	\$1,166,332	\$826,467	\$315,993	\$314,228	\$320,002
602	Building Capital		\$6,000	\$5,820	\$5,645	\$5,476	\$5,312	\$5,312	\$5,312	\$5,312
603	EF&I Loading		\$1,032,447	\$937,865	\$226,344	\$72,466	\$55,601	\$23,140	\$23,228	\$23,661
604	Total Capital		\$21,681,377	\$19,695,167	\$4,753,228	\$1,521,784	\$1,167,624	\$485,948	\$487,791	\$496,878
605										

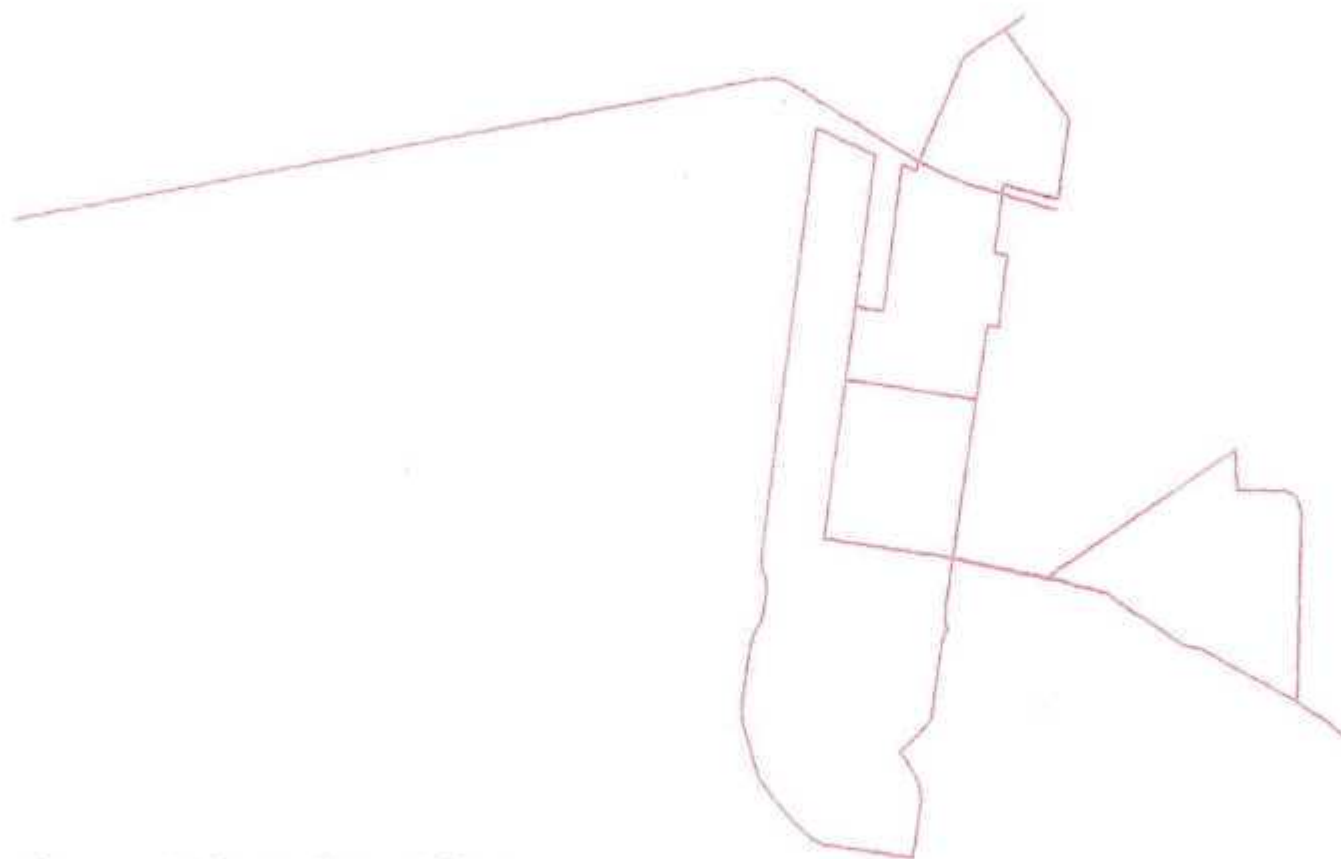
	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH	2003	2004	2005	2006	2007	2008	2013	2017	
606	Cash Flow Summary	Year1	Year2	Year3	Year4	Year5	Year6	Year11	Year15	
607										
608	Operating Income									
609	Total Revenue	\$664,911	\$4,808,639	\$9,144,814	\$11,175,516	\$11,849,071	\$12,143,269	\$12,712,725	\$13,193,517	
610	Total Expense	(\$2,758,079)	(\$4,162,078)	(\$5,775,379)	(\$6,004,767)	(\$6,290,230)	(\$6,288,381)	(\$6,691,934)	(\$7,024,376)	
611	Total	(\$2,093,167)	\$646,561	\$3,369,435	\$5,170,750	\$5,558,841	\$5,854,889	\$6,020,791	\$6,169,142	
612										
613	Annual Cash Flow									
614	Total Capital Expenditures	(\$21,681,377)	(\$19,695,167)	(\$4,753,228)	(\$1,521,784)	(\$1,167,624)	(\$485,948)	(\$487,791)	(\$496,878)	
615	Interest income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$711,857	
616	Total	(\$23,774,544)	(\$19,048,606)	(\$1,383,793)	\$3,648,965	\$4,391,217	\$5,368,941	\$5,533,000	\$6,384,121	
617										
618	Cumulative Cash	(\$23,774,544)	(\$42,823,150)	(\$44,206,943)	(\$40,557,978)	(\$36,166,761)	(\$30,797,821)	(\$3,469,381)	\$20,937,311	
619										
620	Net Present Value	(\$22,642,423)	(\$39,920,070)	(\$41,115,443)	(\$38,113,430)	(\$34,672,797)	(\$30,666,410)	(\$13,019,187)	(\$772,607)	
621										
622	IRR	NM	NM	NM	NM	-43.0%	-27.7%	-1.3%	4.7%	
623										
624	Indicator Summary									
625	Years to Cash Positive	4								
626	Years to Break Even	12								
627	NPV - Year10	(\$16,254,218)								
628	NPV - Year15	(\$772,607)								
629	IRR - Year10	-3.9%								
630	IRR - Year15	4.7%								
631										

	A	B	D	E	F	G	H	I	N	R
1	Scenario = FTTH		2003	2004	2005	2006	2007	2008	2013	2017
632	Bonding Summary		1	2	3	4	5	6	11	15
633										
634	Bonding Strategy									
635	Bond Anticipation Note (BAN) Balance		(\$21,700,000)	(\$41,400,000)	\$0	\$0	\$0	\$0	\$0	\$0
636	Bond Balance (End of Year)		\$0	(\$46,200,000)	(\$44,802,792)	(\$43,335,725)	(\$41,795,303)	(\$40,177,861)	(\$30,793,601)	(\$21,451,287)
637	Annual Bond Payment (Principal and Interest)		\$0	\$0	\$3,707,208	\$3,707,208	\$3,707,208	\$3,707,208	\$3,707,208	\$3,707,208
638										
639	Operating Income									
640	Total Revenue		\$664,911	\$4,808,639	\$9,144,814	\$11,175,516	\$11,849,071	\$12,143,269	\$12,712,725	\$13,193,517
641	Total Expense		(\$2,758,079)	(\$4,162,078)	(\$5,775,379)	(\$6,004,767)	(\$6,290,230)	(\$6,288,381)	(\$6,691,934)	(\$7,024,376)
642	Total		(\$2,093,167)	\$646,561	\$3,369,435	\$5,170,750	\$5,558,841	\$5,854,889	\$6,020,791	\$6,169,142
643										
644	Operating Income After Financing Costs									
645	Annual BAN Interest		(\$759,500)	(\$1,449,000)	\$0	\$0	\$0	\$0	\$0	\$0
646	Annual bond Interest		\$0	\$0	(\$2,310,000)	(\$2,240,140)	(\$2,166,786)	(\$2,089,765)	(\$1,642,896)	(\$1,198,024)
647	Interest income		\$0	\$8,298	\$3,832	\$4,474	\$6,786	\$41,325	\$528,606	\$1,046,908
648	Total		(\$2,852,667)	(\$794,141)	\$1,063,268	\$2,935,084	\$3,398,840	\$3,806,449	\$4,906,501	\$6,018,026
649										
650	Annual Cash Flow									
651	Total Capital Expenditures		(\$21,681,377)	(\$19,695,167)	(\$4,753,228)	(\$1,521,784)	(\$1,167,624)	(\$485,948)	(\$487,791)	(\$496,878)
652	Bond Proceeds		\$21,700,000	\$19,700,000	\$4,800,000	\$0	\$0	\$0	\$0	\$0
653	Utility Provided Cash		\$3,000,000	\$700,000	\$300,000	\$100,000	\$0	\$0	\$0	\$0
654	Annual Bond Principal Payment		\$0	\$0	(\$1,397,208)	(\$1,467,068)	(\$1,540,421)	(\$1,617,442)	(\$2,064,312)	(\$2,509,184)
655	Total		\$165,956	(\$89,308)	\$12,832	\$46,232	\$690,795	\$1,703,058	\$2,354,399	\$3,011,964
656										
657	Net Cash (Cumulative Cash less Bond)									
658	Cumulative Cash		\$165,956	\$76,647	\$89,480	\$135,711	\$826,506	\$2,529,564	\$12,926,515	\$23,950,116
659	Bond Balance		\$0	(\$46,200,000)	(\$44,802,792)	(\$43,335,725)	(\$41,795,303)	(\$40,177,861)	(\$30,793,601)	(\$21,451,287)
660	Total Net Cash		N/A	(\$46,123,353)	(\$44,713,313)	(\$43,200,013)	(\$40,968,797)	(\$37,648,297)	(\$17,867,087)	\$2,498,829
661										
662	Average Monthly Revenue (Residential)									
663	Per basic cable sub		N/A	N/A	\$37.51	\$44.72	\$46.45	\$47.77	\$50.11	\$52.07
664	Per Internet subscriber		N/A	N/A	\$35.23	\$39.38	\$39.71	\$40.22	\$40.22	\$40.22
665	Per telephone subscriber		N/A	N/A	\$13.54	\$14.99	\$15.13	\$15.28	\$15.28	\$15.28
666										
667	Indicator Summary									
668	Peak Negative Cumulative Cash		\$76,647							
669	Total Utility Cash Provided		\$4,100,000							
670	Years to Bond Payoff		15							
671	Cumulative Cash Year10		\$10,572,116							
672	Cumulative Cash Year15		\$23,950,116							
673	Net Cash Year10		(\$22,285,797)							
674	Net Cash Year15		\$2,498,829							
675										

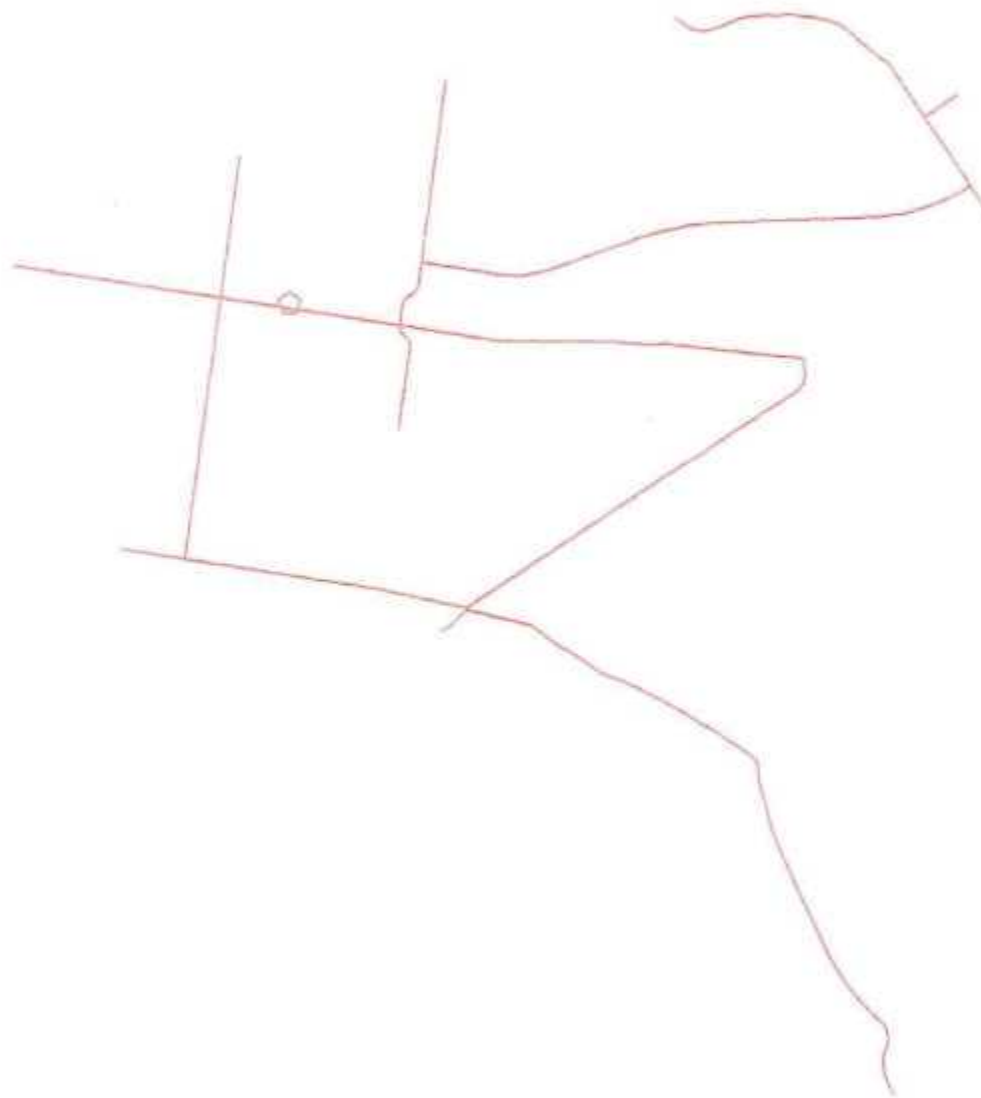
Uptown FSN Model V1.2a May 3, 2002



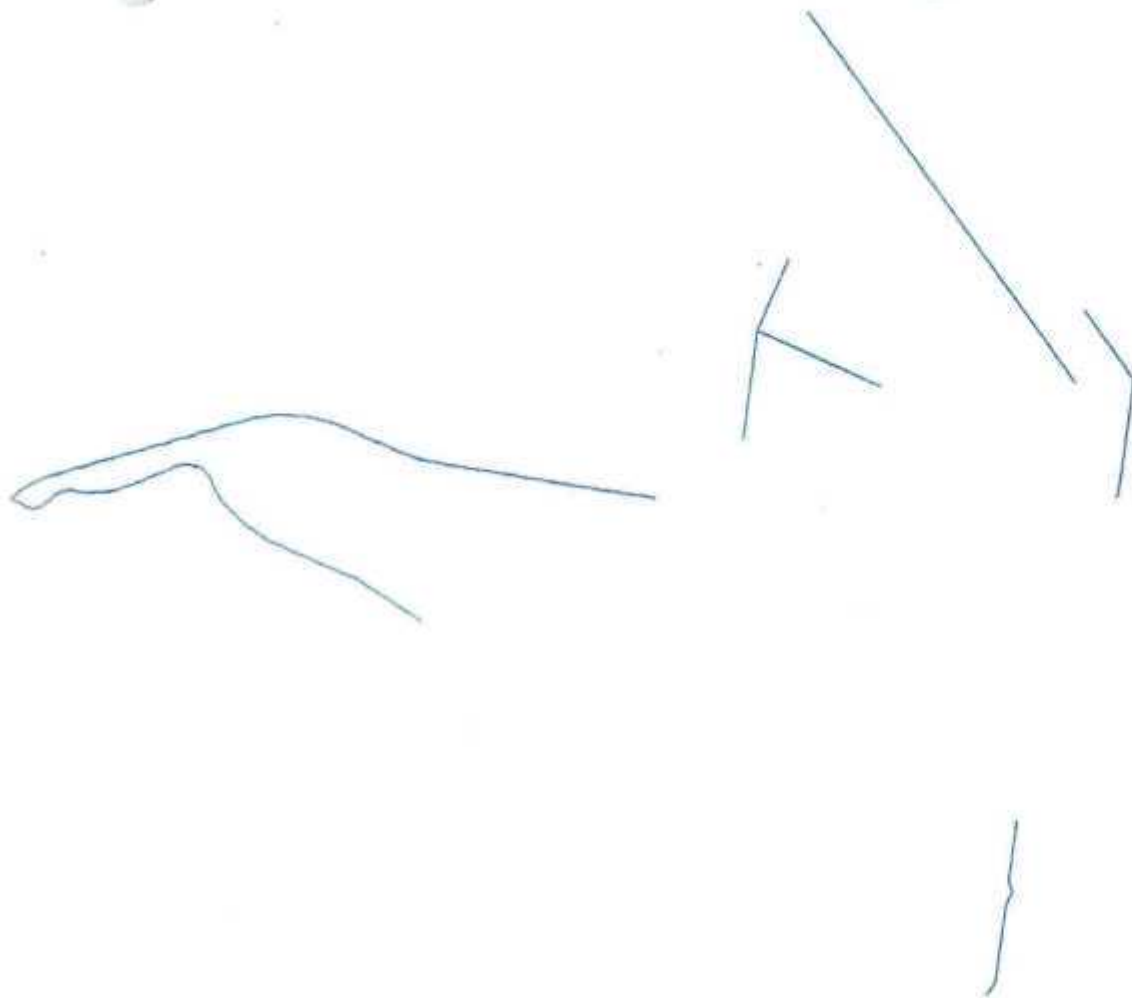
Complete Network Rings
With Hub Locations



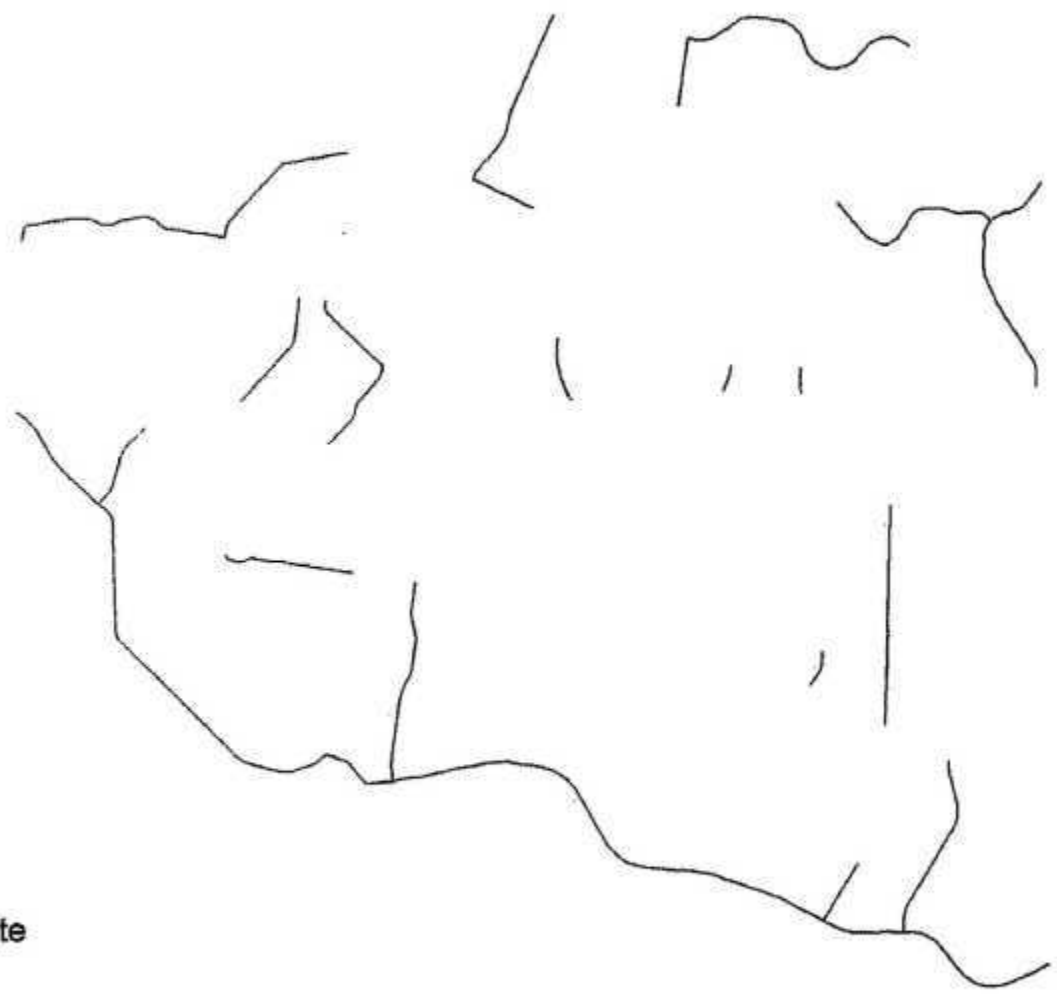
Commercial Carrier Network Route



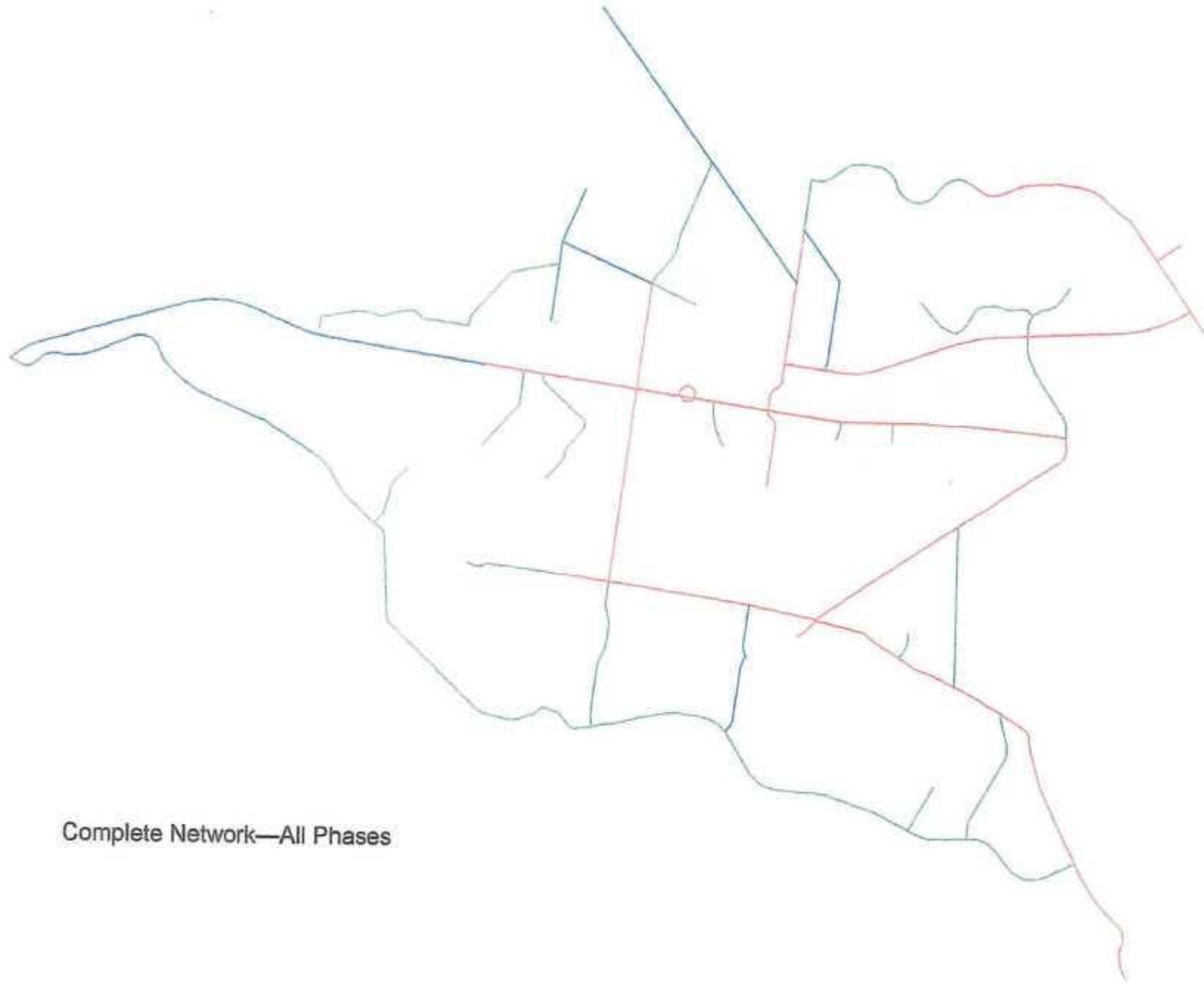
Phase I Network Route



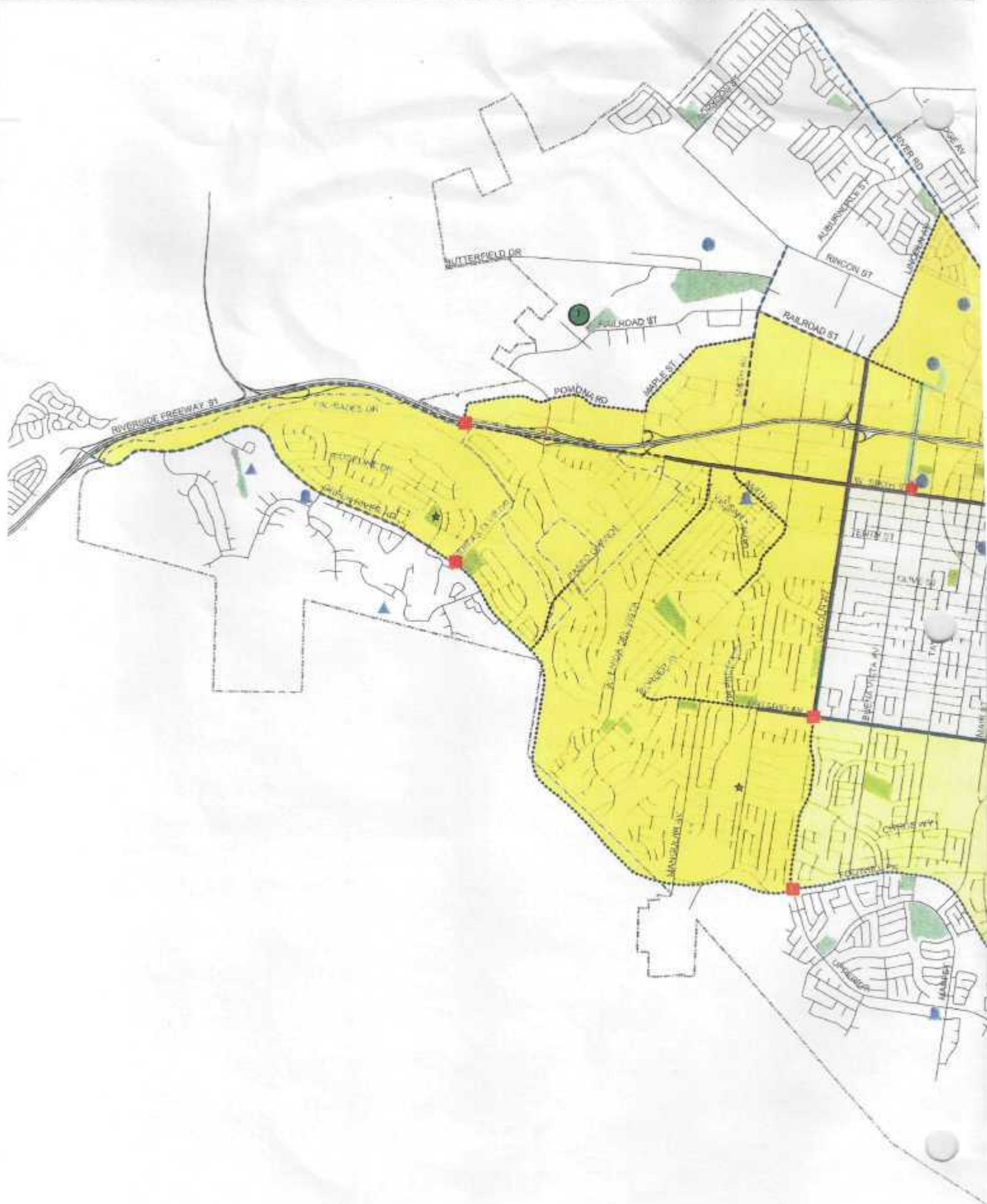
Phase II Network Route



Phase III Network Route



Complete Network—All Phases



Loop1
Loop2
Loop3
Loop4
Loop5



Phase 1
Phase 2
Phase 3

 Network Hub Phase 1
Network Hubs

-  Existing Fiber / Open Conduit
-  Traffic Interconnects
-  City Owned Buildings
-  City Parks
-  Fire Stations
-  Police Sub Station
-  Water Treatment Plant
-  Waste Water Treatment Plant



City of Corona
Management Services
Geographic Information System
November 2002



B9 Beltway exit

Gov. Schwarzenegger hopes Washington politicians will resolve the driver's license issue, columnist Dan Walters says.

THE PRESS-ENTERPRISE

LOCA

TELEVISION

CONTINUED FROM B1

Fernando Valley before moving to March in 1995.

Long gone are the days of reel-to-reel movies and video tape recorders. A digital revolution has taken root in military programming, and March Air Reserve Base is where it is all taking place.

Take the upcoming Major League Baseball playoffs for example. From a control room at March, those ballgames will be beamed across the Atlantic or Pacific oceans to soldiers

"People are deployed months and years."

LARRY MAROTTA, CHIEF OF THE TELEVISION DIVISION, WHO NOTES THAT THIS MAKES AMERICAN SPORTS, NEWS AND OTHER PROGRAMS IMPORTANT TO MILITARY PERSONNEL STATION ABROAD.

gathered in mess halls thousands of miles away.

And the best part?

It's all commercial-free, says Marotta.

SECTION

B

TUESDAY

DSCMR SEPTEMBER 7, 2004

March beams home to troops

TELEVISION: The base is host to the world's largest network, serving U.S. forces worldwide.

BY MICHAEL CORONADO
THE PRESS-ENTERPRISE

The bank of plasma monitors perches amid a dozer of red screens, where hundreds of red and gold lights blink dizzily.

Frigid air swirls inside the control room, deep in a cavernous building at March Air Reserve Base. Nearby, a sign that reads "classified" hangs over a sealed gunmetal-grey vault.

This place could be a war room.

Except, that is, for *SpongeBob SquarePants*, who's dancing on a television screen to the delight of cheering children.

From inside its desert home, the media center at March beams television and radio programs to more than 800,000 military personnel and Defense Department employees worldwide.

"We are the world's largest television network," said Gene Frederickson, the television publicity manager for the Defense Media Center at March

Air Reserve Base.

Just days ago, the crews at the media center celebrated the launch of two new television channels: American Forces Family and American Forces Movie.

Comedy programs such as John Stewart's "The Daily Show" and the sitcom "Everybody Loves Raymond" are an important morale booster for

Marines sweltering in the desert heat of Iraq or a family stationed in Japan.

"People are deployed months and years," said Larry Marotta, chief of the television division. The opportunity "to cheer on their home team or be engaged in a drama" is important to them, as is access to American news and information.

The broadcast center beams

nine channels across the globe, offering sports, cartoons, news and movies among other programs.

Military broadcasting began during World War II as a means to pass on military news and information to field soldiers. The broadcast service was housed in a warehouse in Hollywood, and then in the

See TFI FUIS