

**REPORT ON CABLE TELEVISION-RELATED NEEDS ASSESSMENT FOR THE
CITY OF FORT COLLINS, COLORADO**

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CABLE TELEVISION NEEDS ASSESSMENT IN FORT COLLINS, COLORADO

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EXECUTIVE SUMMARY

Telecommunications Research Corporation (TRC), working with its team partners, Tom Robinson and Dick Nielsen of CBG Communications; Tom and Bob Duchon of River Oaks Communications; Lou Karrison, CPA; and Carson Hamlin, Video Engineer/Media Integrations Specialist with the City of Fort Collins, has conducted an extensive cable-related needs and interests ascertainment in the Fort Collins franchise area. This work included the following studies:

- A. Residential study of citizen experiences with Comcast cable television.
- B. Communities of interest and other stakeholders' needs as related to cable television.
- C. Public, Education and Government (PEG) needs assessment and a technology plan for future needs.
- D. Technical audit of the cable television system.
- E. Financial audit of the franchise's financial requirements.
- F. Current trends in cable television franchises.

This ascertainment has been conducted as part of cable franchise renewal proceedings with the local cable television provider, Comcast. The current franchise is set to expire March 16, 2015.

TRC and its partners have decades of experience working with local governments on cable television issues, such as, needs assessment, PEG Access, technology, franchise fee payment audits, telecommunications, and other matters. We have performed numerous community, PEG and I-Net Needs Ascertainties, as well as PEG Access, Technical and I-Net reviews and audits in preparation for franchise renewals.

The full results of the needs and interests ascertainment are presented in detail in the attached report. Our findings offer a wealth of information for Fort Collins regarding issues of significance to the citizens and organizations in the Fort Collins franchise area, related to cable communications, and the ability of the cable system and Comcast to meet demonstrated needs and interests. The

key findings, recommendations and observations discussed in this summary and in the report are based on an extensive data collection including, but not limited to, the following:

- A written residential survey on cable-related needs and interests, randomly administered to 4000 randomly selected households in the Fort Collins area with a return sample of 701 or 18%. This provides a margin of error of ± 3 percentage points.
- An on-line questionnaire which resulted in a wide variety of residents' participating and a response rate of 86%.
- A well-attended public hearing in October 2013.
- Internal and external stakeholders focused discussions that again included a variety of representatives from different community organizations, government agencies and businesses.
- Interviews with educational organizations, including representatives from Poudre School District and Colorado State University.
- Focused discussions, interviews with staff and on-site visits to current PEG Access programming production and origination locations.
- Online questionnaires with Fort Collins stakeholders that reached more than 200 citizens to detail their business, non-profit, government and educational current and future needs related to cable television.
- A review of a variety recently negotiated cable television franchises to offer perspective on what is happening around the country between local franchising authorities and cable television.

The analysis of this data enabled TRC and its team partners to develop a series of findings for Fort Collins to consider as it plans for renewal of the cable television franchise with Comcast. The following recommendations and observations are offered to the City for its consideration.

A. Residential study of citizen experiences with Comcast cable television.

The following series of observations and recommendations emerged during the random, residential survey of cable television needs and interests in Fort Collins, Colorado. The survey, conducted in October 2013, surveyed 4000 randomly sampled homes and had a response rate of 18% or 701 returned surveys. This provides a margin of error of ± 3 percentage points. The following observations and recommendation are offered for franchise renewal consideration:

- 1. Subscribership and Non-Subscribership** – The City of Fort Collins has a strong engagement with Comcast services with 53% of households participating in this study reporting they subscribe to the cable television services offered. This is consistent with the national average where just over half of households in the United States report subscribing to cable television.

Among non-subscribers to Comcast in Fort Collins, the primary reason is related to the cost of service (46%). Thirty-seven percent (37%) of non-subscribers reported subscribing to a competing satellite service (17% of all respondents surveyed). Overall the findings suggest that to further engage non-subscribers as Comcast moves into franchise renewal it would need to offer new/alternative programming package options at a variety of more affordable rates. This would address concerns about costs, rate increases without perceptible change in service levels (price/value concerns) and a la carte channel selection. It is important to note that 28% of non-subscribers to cable television service do subscribe to one or more of Comcast's other products available in Fort Collins (Internet, telephone or home security).

- 2. Subscriber Satisfaction** – Sixty percent of cable subscribers (60%) are generally satisfied with their overall cable service, with 43% indicating a positive trending score and 17% indicating "very satisfied." The other 40% of subscribers trend negative with 13% of these "very dissatisfied." While these scores show a significant negative opinion, they

are consistent with some of Comcast's other tested markets, although lower than several conducted in the last 36-months. Interestingly, when the City conducted its 2004 needs assessment, the positive rating of cable service was at 59%. In other words, in the last 10 years the satisfaction level with cable television service has moved 1 point forward. This speaks to the need for more frequent studies of customer satisfaction during the franchise period so that improvements can be made based on customer feedback. It also speaks to little achievement by Comcast in improving customer satisfaction with its services over the last decade in Fort Collins.

Those that rated cable service more negatively indicated that the primary reason was related to high rates or increasing rates. More than half (51%) of subscriber respondents who trended less than very satisfied indicated that they would have a higher rating if Comcast offered lower rates. An additional 11% indicated that their satisfaction would improve if the reception was better and 7% desire a la carte programming options. All of these areas, particularly the concerns related to reception, are deserving of immediate attention by Comcast and would likely drive higher customer satisfaction with the service.

- 3. Technical Issues** – While most cable subscribers indicated they were satisfied with picture quality (90% positive), 15% of subscriber respondents indicated that they had experienced picture clarity or reception problems. These problems with reception are the second most common reason subscribers report lower overall satisfaction with cable television service and the primary reason they call customer service. A number of subscribers who had picture quality problems indicated “weak signals”, “pixilation”, ongoing channel reception difficulties and then mentioned specific channels. A full listing is available with the City.

Additionally, 51% of respondents indicated they had experienced a cable outage in the past year for more than fifteen minutes while electricity was on and 30% (roughly 1 in 3) described the responsiveness to the outage by Comcast negatively.

Both technical difficulties and outages resulted in calls to the cable company, adding call volume and as a result put pressure on the telephone response time. Improvements to technical operations will likely reduce call volume and ease the 48% of cable customers who called reporting hold times in excess of 30 seconds. This is significantly out of the range of federal customer service standards for cable television.

- 4. Customer Service** – While cable subscribers generally are satisfied with Comcast's service, there are certain areas that need enhancement, and areas where subscribers' responses indicate non-compliance with Federal Communications Commission (FCC) Customer Service Standards. These are:

Telephone Answering Standards – Seventy-six percent (76%) of cable subscribers had called the cable company in the last year and the top three reasons for calling were a service issue. Eight percent (8%) of subscribers indicated that they received a busy signal when calling the company, which is 266% greater than the three percent (3%) level specified by the FCC as the desirable customer service standard. Additionally, 48% indicated that their call had not been answered within thirty (30) seconds, including the time left on hold, which would be almost 500% greater than the tolerance allowed (10%) under the FCC Customer Service Standards. Primary reasons for calling were related to service/reception issues, an issue with the cable box, and a problem with the bill.

Outages and Restoration of Service – Approximately 1 out of every 2 cable subscribers (51%) reported they had experienced an outage lasting more

than fifteen minutes while electricity was still on in the last year. The average number per customer was 2.85 and the most common reported number was 2. Seventy-five percent (75%) of those experiencing an outage called the cable company to report it and while 70% were positive about the cable company's response to the outage, 30% were not. Important to franchise renewal proceedings are several customer service issues around restoration of service, the satisfaction level that subscribers have with the length of time it takes to restore service, telephone response time and credits or refunds for down periods on the cable system.

Communicating with Cable Subscribers – Thirty-eight percent (38%) of subscriber respondents indicated they were “dissatisfied” or “very dissatisfied” with Comcast’s communications related to rate changes and 22% with programming changes. Comcast needs to review and then improve how changes in programming, rates and service are communicated to cable subscribers and in what platforms they communicate these issues. For example, the company might consider launching a broad television-based information campaign when channel realignments or rate increases are announced. This would likely reduce some of the subscriber respondents who called Comcast about a billing question which in turn creates pressure on their telephone response times potentially contributing to the findings of not being in compliance with FCC customer service standards. Additionally, the communication during a new install was rated negatively by 22% of subscribers when asked about the technician’s ability to explain subscribing options.

Each of these are areas that we recommend as focus areas with Comcast in franchise renewal to see what improvements can be made to resolve the concerns indicated by

subscribers and to work to enhance the means of monitoring these issues during the next franchise term.

- 5. Access Channels and Viewership** – A significant portion of subscribers reported regular viewership of Fort Collins’ local access channels 10, 11, 14 and 97. Twenty-six percent (26%) of subscribers reported watching on a daily or weekly basis. While these percentages may at first appear low, it is important to keep in mind that cable television’s business model is rooted in niche channels rather than mass appeal channels. As an example, one of the top overall cable networks, ESPN, typically has a weekly cumulative audience of 35% of all television households. While not a direct comparison because of the different measurement basis (national multichannel video subscription versus local cable television subscribers weekly viewership), the 26% of Fort Collins subscribers that report watching local access programming on a daily and weekly basis should be seen as viable and healthy cable television viewership and a valuable part of Comcast’s cable service. Additionally, PEG channels in Fort Collins have a much greater viewership than several of Comcast’s owned cable networks, such as CNBC and Sprout.

Additionally, subscribers indicated a strong level of importance that a portion of their cable bill continues to go to cover the cost of programming on these channels. Eighteen percent (18%) indicated it was “very important” with an overall 72% expressing some level of importance for this funding.

Overall, the results from the survey show a high level of interest in local access programming, indicating that a renewed franchise should have strong support for continuation and enhancement of access programming and distribution. Such enhancements should occur in a variety of areas, most specifically ways to improve the picture and sound quality so that it is rated on par with the other channels on the system, better programming and services information about the channels, ensuring the

channels are integrated into the system in a way that puts them on a level playing field with other channels and enabling the generation of greater amounts of programming in the categories specified.

B. Communities of interest and other stakeholders' needs as related to cable television.

The City of Fort Collins ("City") conducted a needs assessment study to determine the current and future cable communications-related needs and interests of the Fort Collins community. The assessment methodology involved several types of information gathering techniques, including:

- A community Town Hall meeting which was publicized on the City Channel
- Focus groups with City Departments, Non-Profit Groups, and Business Groups
- Phone calls and/or invitation letters

Based on the results of this portion of the needs assessment process, a number of matters could be pursued with Comcast during franchise renewal negotiations. Based on this needs assessment, the following observations are offered:

1. Community stakeholders expressed the need for a basic package of cable service (with fewer cable channels at a reduced price). The current situation in the City regarding Comcast's basic service package offering is both unsatisfactory and exasperating for numerous residents throughout the City – these comments were expressed by several stakeholders during the Town Hall Meeting.
2. Irrespective of whether there is Effective Competition in Fort Collins or whether the FCC determines that Effective Competition exists, the City desires that Comcast keep the PEG channels on the Basic Tier. Comcast places its legal position on a very small section in the Federal Cable Act. Based on the City's needs, the City should reserve its rights to object to Comcast trying to move PEG channels.
3. The Competitive Equity section should be carefully written, given the changes in what is permissible or not permissible under federal law with respect to Universal Service requirements and what specific criteria may give Comcast the ability to require the City

to amend Comcast's Franchise with respect to material terms and conditions. Typically, Comcast wants much broader Competitive Equity language than does a Local Franchising Authority. The current City Code, as described to us by the City, contains a Universal Service build-out requirement, and the City is addressing this in the going forward franchise. The City will need to take into account FCC Orders and other federal and legal limitations.

4. Comcast needs to make non-profit organizations more aware of the availability and potential outreach uses of the cable system. Community service organizations need to have access to greater bandwidth and connectivity. Many stakeholders indicated that Comcast was not providing these assets.
5. The City should require a mid-term technology review of the cable system, with subsequent modifications made as needed to meet the cable-related needs and interests of the community. The future cable system modifications need to enable the provision of any and all new cable services that are introduced and implemented in the Denver area or along the Front Range by Comcast or its affiliates. The upgrade of the system may provide an incremental cost opportunity to install additional fiber strands for other City uses as well.
6. If the cable system is updated, then all connections for City and educational facilities should be concurrently modified as needed at Comcast's expense. Access equipment/facilities upgrades by the City, public schools (K-12), and CSU resulting from changes in Comcast's system should be at the cable company's expense.
7. Free cable drops and Basic and Expanded Basic Service for City buildings, libraries and educational facilities (for example, public schools [K-12]) have value for community stakeholders and should be provided. Additionally, Comcast should be encouraged to provide free service to the digital line-up for all key City, School District and school

buildings. Based on feedback from community members, while outside the scope of cable television franchise negotiations, as a courtesy the City should also encourage Comcast to provide Cable Internet Service to key City buildings and libraries. These drops are very important both from a television and Public Safety standpoint. In the event of an emergency or lock down involving schools, real time dissemination of information can help protect and save lives of students, School personnel and First Responders.

8. Channels 10 and 11 – the Educational Access Channels, Channel 14 – the City Channel, Channel 97 - the Public Access Channel ("FCPAN") and the internal channel currently used by Aims Community College are very important and should be preserved, with additional Access channels being made available based upon trigger mechanisms in the new franchise. City stakeholders desire the ability to determine whether to use the channel currently used by the Community College as an Internal City channel for training. Supplemental, or perhaps alternatively, the City could consider negotiating with Comcast for Access Channel bandwidth and individual channels. In any event, if Access channel locations are changed, Comcast should pay for the "rebranding" costs.
9. There was a need expressed in assigning a portion of the subscribers' cable bills and a portion of the Franchise Fee to support Public, Educational and Governmental ("PEG") Access facilities and equipment as well as supporting FCPAN. An Access capital grant fund should be continued based upon a monthly per subscriber charge to be negotiated with Comcast. The up-front capital grant should be sufficient to upgrade or replace aging Access equipment and further enhance digital capabilities for Channel 14. The Access payments and provision of facilities and equipment need to be in addition to the franchise fee payments. A provision should be included in the new Franchise so if the Federal Law changes to permit PEG funding to be used for operational purposes, then the City should have that right.

10. Over the life of the new franchise, there is a need and interest among community stakeholders in having enhanced studio and production facilities to enable the PEG Access Channels to provide for the community's evolving programming needs. The Public Access Community (FCPAN) works with numerous non-profits as well as being a provider of new and original community programming.
11. Stakeholders indicated that new, upgraded and replacement equipment for the PEG Access Channels needs to be provided in accordance with a schedule to be negotiated between the parties. Replacement equipment should be provided as needed throughout the franchise term.
12. Community members expressed a need and interest in having Comcast resolve Customer Service issues. This leads to comprehensive customer service standards that, among other things, ensure that issues in operator performance that may have occurred in the past do not recur. We would encourage the City to have specific customer service standards that allow for liquidated damages and customer refunds should it be shown that Comcast is not meeting the requisite standards.
13. A regional interconnection between the Comcast cable system in the City and other neighboring Comcast cable systems, including those in Larimer County, should be effectuated for the purposes of sharing Access programming, furthering E-Government applications, promoting information sharing, enhancing student, School personnel and First Responder safety, and Homeland Security.

C. Public, Education and Government (PEG) needs assessment and a technology plan for future needs.

After review and analysis of the data and information gathered from focused discussions with public, education and government access stakeholders, follow-up phone calls and interviews, onsite facility reviews and related web-based and written documents and materials, as well as the written residential and organizational on-line questionnaires, during the PEG Access Needs and Interests Assessment portion of the Needs Ascertainment Project, CBG has developed the following conclusions and recommendations (along with others noted in companion sections of the entire TRC Report such as the Residential Community Needs Assessment and the Public Forum and Organizational Community Assessment Sections). Ways to fulfill these needs should be pursued with Comcast during franchise renewal negotiations.

- 1. Initial Access Channel Capacity** -- Access channel capacity and related channel positions, satisfactory to the City and PEG Access organizations, need to be preserved and expanded as described below. This includes continuation of delivery of:
 - Fort Collins City Cable Channel 14 (Government Access programming).
 - Aims TV Channel 96 (Educational Access programming from Aims Community College. This is currently being provided in lieu of a second Government Access Channel. Our study has concluded that the Channel should continue to be provided, but may migrate to a second Government Access Channel, once programming continues to expand for the City of Fort Collins and Larimer County, or the amount of live and post-produced programming continues to expand, such that separate identities are needed for two Government Access Channels.)
 - Poudre School District Channel 10 (K-12 Educational Access programming provided by PSD).

- CSU-TV Channel 11 (Higher Educational Access programming provided by Colorado State University).
- FCPAN Channel 97 (Public/Community Access programming, provided by the Fort Collins Public Access Network).

In addition to the above, over the course of any renewed cable franchise, as the amount of HD programming continues to increase for all categories of PEG Access, as time-shifted viewing continues to increase by subscribers and as additional advanced platforms of video delivery continue to evolve on the cable system, additional Access Channels, capacity and delivery methods need to be made available. This availability needs to include sufficient capacity for the services to be provided without deterioration in quality and equal to the best commercial services in the same format.

- 2. Provision of Advanced Services and Through Multiple Platforms --** With the Comcast system now converted to an entirely digital format, adequate Access Channel capacity, along with any necessary technical modifications and equipment that may be needed in the future to facilitate the provision of all necessary capacity, needs to be provided. Based on the needs assessed, we recommend that provisions be made, such that the cable system provides the following for all PEG Access entities:

- All of their channels as real time services;
- Enough Video-on-Demand (VOD) capacity to ensure that both highly time-sensitive and evergreen programming for each PEG Access entity can be accessed on the VOD platform;
- All Access Channels provided in High Definition (and potentially in HD 4K, 3D, or other advanced formats provided over the life of the Franchise); and
- Programming provided as interactive television (iTV) services for certain uses identified herein, especially for educational and community programmers.

- 3. Access Equipment --** New, upgraded and replacement equipment for the Community/Public, Governmental and Educational Access Channels needs to be

provided consistent with the projections shown in the Appendix. Equipment category projections have been made from the information provided by the City, FCPAN, PSD, CSU, and associated stakeholders, as well as that obtained through onsite review of equipment amounts, types and conditions, along with the projections for expansions in the nature and level of Access content development. Our review indicates that the following Access equipment funding would be needed over the course of a 10 year timeframe within any renewed franchise to meet the needs assessed:

- *City of Fort Collins City Cable 14* -- To provide new, upgraded and replacement equipment for City Cable 14 to facilitate the Government Access programming produced both at City Hall, as well as in offsite community room locations and through other portable and mobile remote operations, \$2,808,360 (\$2,340,300 base cost, plus \$468,060 installation/training/warranty cost) will be needed during the projected 10 year timeframe, in order to support the government programmatic initiatives indicated by our Assessment findings.
- *K-12 Educational Access* -- To provide new, upgraded and replacement equipment for Poudre School District Channel 10 for Educational Access programming produced both at the Channel 10 Media Center, as well as in the Board Room, at the four comprehensive high schools and at other schools throughout the District, \$2,841,360 (\$2,367,800 base cost, plus \$473,560 installation/training/warranty cost) will be needed during the projected 10 year timeframe to support the K-12 programmatic initiatives indicated by our Assessment findings.
- *Higher Educational Access* -- To provide new, upgraded and replacement equipment for CSU-TV 11 to facilitate higher educational access programming produced at the CSU-TV 11 facility, around the CSU campus and throughout the Fort Collins community, \$2,458,800 (\$2,049,000 base cost, plus \$409,800 installation/training/warranty cost) is needed during the 10 year timeframe to

support the higher education programmatic initiatives indicated by our Assessment findings.

- *Public/Community Access FCPAN Channel 97* -- To provide new, upgraded and replacement equipment for FCPAN to facilitate Public/Community Access programming produced both at the existing and planned FCPAN facility, as well as through portable and mobile remote operations, \$1,623,360 (\$1,352,800 base cost, plus \$270,560 installation/training/warranty cost) is needed during the projected 10 year timeframe to support the Public/Community Access programmatic initiatives indicated by our Assessment findings.

4. **Access Facilities** -- The needs assessment indicates that existing space, and planned new space for FCPAN, will be adequate to support PEG Access operations during any renewed cable franchise during the next 10 years. However, this considers that FCPAN and the City will be able to achieve successful implementation of FCPAN operations at the Carnegie Building (old library). If this does not occur, then additional funding may be needed to support development of a new FCPAN facility in another location.
5. **Capital Support for Facilities and Equipment** -- As indicated above, for equipment, the total dollar figure needed over a 10 year period equals \$9,731,880 (\$8,109,900 base cost, plus \$1,621,980 in installation/training/ warranty cost). Note that in some years, the needs are significantly greater than in other years and create a situation where high amounts of funding are needed for that particular year. Examples include Year 1 (\$1,808,310 in equipment needs) and Year 2 (\$1,458,630 in equipment needs). Depending on how funding is provided, there may be the need for capital fund advances and grants in those years over what may be traditionally provided as PEG support by way of PEG Fee payments.

Subscribers in the Fort Collins area are currently providing a per subscriber, per month PEG Fee in support of PEG Access needs, of \$0.50 per subscriber, per month. Over a 10 year period, if subscribership holds steady at existing levels, and all subscribers in the Fort Collins area are factored in, the sum projected to be generated would be

approximately \$1.8 million. This falls well short of the PEG Access needs described herein, meaning that there will need to be an increase in the amount of funding currently generated.

D. Technical audit of the cable television system.

A comprehensive technical audit of the Comcast cable system in Fort Collins was conducted. This included a random assessment of 151 points (residential and business) in the system. Based on the findings of the audit and drive out inspection of the system; the following recommendations and observations about the technical system are offered:

- 1. System Design and Bandwidth** - As subscribers' desires and needs increase over time, the system's bandwidth or capacity may need to increase. It is difficult to predict what bandwidth needs will be in just a few years, let alone over the course of a 10 year or longer franchise term. For instance, DOCSIS cable modem technology now allows the operator to expand available Internet access speeds and throughputs by utilizing additional channels or space on the system. Although this improves subscribers' Internet speeds, which is a positive outcome, it also decreases the bandwidth for Cable TV services. Furthermore, new services will come along and the number of high definition, 4K high definition and 3DTV or other advanced services or channels will continue to increase as these become even more the preferred, if not demanded, means of TV watching.

As outlined in the report, possible methods of minimizing the impact of additional bandwidth needs include upgrading the system to 1,000 MHz, upgrading the system to FTTP architecture and deployment of SDV. These and other options should be reviewed and considered as part of franchise renewal, at a minimum during a required Franchise triennial technical review.

- 2. FCC Testing Documentation** – The City should require Comcast to test the system to show compliance with FCC §47CFR76.640 at a minimum of 5 locations in the City. Comcast should be required to document the results of this testing and provide copies to the City in place of their previously regularly scheduled FCC POP testing which is no longer required.

3. **Picture Quality** – The City should review our findings related to SD channel picture quality with Comcast and perform additional subjective testing, on a regular basis, in cooperation with Comcast to further understand what issues subscribers may have. This testing can be done with Comcast converters and a television with a screen size of at least 40 inches.
4. **Regular Inspection of Infrastructure** - Comcast must be required to maintain its system infrastructure in a safe manner and ensure they protect the public as well as technicians and others that must enter the areas around cable TV infrastructure. Comcast should first respond to and resolve all the problems noted in Attachment D. Then the City should require a maintenance program to be implemented to address the other similar issues that exist in the City, based on statistical probability. This program should also be designed to continually inspect all cable TV infrastructure from the headend locations, up to and including at the subscribers' residences or business locations. Documentation should be provided to the City detailing problems found, dates found and repaired and the ultimate resolution. These inspections and repairs should include, but not be limited to:
 - Drops properly attached to poles
 - Drops properly buried in a timely manner (all the way from the pedestal to the home or business)
 - Ground rods properly buried
 - Hardline cables properly attached to the pole and protected
 - Down guys and guys over roads properly installed and tensioned
 - Power supplies locked
 - Apartment boxes secured, neat and bonded to power and phone
 - Pedestals in good condition, replace faulty doors, smashed covers, etc.
 - Proper grounding and bonding at the poles and pedestals
 - Proper grounding at the residence or business
 - Proper clearances between facilities and providers on poles

- Proper clearance of aerial cables to the ground

In addition, the City should ensure it has access to perform spot checks on a regular basis to determine if the system is being maintained as required by both the NESC and NEC and as required in the current and future franchises.

The technical audit offers additional observations about Comcast's system infrastructure and performance in the full report detailing the audit. The observations made are only a starting point for renewal consideration, ensuring the next franchise agreement provides a strong articulation of expected system performance.

E. Financial audit of the franchise's financial requirements.

A financial audit of the 2012 franchise year was conducted by Karrison, LLC. The audit is detailed in Section E of the needs assessment and includes a systematic and random review of the 2012 financial year. The audit found one issue that resulted in a 2012 underpayment and made three recommendations for consideration in the next franchise agreement.

- The 2012 audit demonstrated an underpayment of franchise fees on advertising agency commissions (\$23,243) and carriage of programming (\$1535). This total of \$24,778 was for one year of the 10 year franchise. If this same event occurred in each year, the underpayment of franchise fees to the City could be \$247,780.

Additionally, the following recommendations are offered:

- 1. Gross Revenues definition.** If possible, the City should consider removing any reference to generally accepted accounting principles (GAAP) in the franchise agreement to ensure that the definition of gross revenues used to determine the franchise fee is purely a contractual definition, and not subject to changes and interpretations of accounting rules from time to time.
- 2. Audit Period Limitation.** If possible, the City should consider changing Section 3.6 of the franchise which limits the audit period to three to five years.
- 3. Bundled Discounts.** Bundling of services has become a common practice. Any discounts should be applied to each service offering and not allocated to any one service. The City should consider articulating this understanding in the next franchise agreement.

F. Current trends in cable television franchises.

To highlight trends in cable television franchising around the country, a review of recently negotiated franchises was conducted and a summary provided to the City. These summaries are presented briefly in the report and include the following communities:

- El Paso County, Colorado (signed 2012)
- Redmond, Washington (signed 2013)
- Aurora, Colorado (signed 2013)
- Denver, Colorado (signed 2014)

This Executive Summary identifies the key issues that emerged during the needs assessment and offer the City an important overview as they consider the next franchise agreement with Comcast. The reports appended to this executive summary offer details on methodology and the findings presented in the Executive Summary, as well as other findings, that will be important to the effective renewal of the cable television franchise.

A. Residential study of citizen experiences with Comcast cable television.

CABLE TELEVISION FRANCHISE RESIDENTIAL COMMUNITY NEEDS ASSESSMENT

Introduction¹

The City of Fort Collins “the City” conducted a residential mail survey to assess community needs and interests related to cable television services in the unincorporated areas of the City. The data collected will be used to assist the City in developing an effective franchise agreement with the local cable operator, Comcast. This narrative summary reports on the findings of the mail survey.

A random set of 4000 addresses were pulled using the records maintained by the United States Postal Service that are updated every 30 days. Only addresses within the city limits were included in the sample. The database was reviewed to ensure that each of the addresses included in the study lived within the Comcast cable television franchise area.

The surveys were mailed first class to community residents in an envelope with a Fort Collins logo in October 2013 with a three-week return of October 25, 2013. A mark-up of the survey and the findings illustrated in this narrative are available in Attachment A.

Of the 4000 mailed surveys, a total of 701 were returned by the closing date for a total response rate of 18%. In other words, almost 1 in 5 residents returned the randomly sampled survey on cable television. A sample of 701 surveys provides what many statisticians agree to be the most achievable margin of error of ± 3 points. This margin of error lets the reader know that if this random study were replicated in Fort Collins, the newly collected data would fall within ± 3 points of the findings reported in this narrative.

The survey instrument was designed to test community cable needs and interests and asked City residents to respond to a series of 36 questions related to a variety of cable service issues.

¹ Percentages have been rounded off to the nearest whole number; therefore totals will fall between 99-101%.

Also included in this assessment were questions related to public, education and government local access programming that appears on Channels 10, 11, 14 and 97 in the Fort Collins franchise area.

At the close of the survey, respondents were asked in an open-ended question if there was anything else they would like to add about their cable service or the cable company and 41% of respondents added additional thoughts.

This strong response rate and rate of survey completion, including open-ended comments made at the close of the survey, suggests a significant level of interest in cable television service among residents, as well as the additional services provided by cable television, such as broadband services and telephone services, subscribed to by a significant number of cable television subscribers and non-subscribers.

Demographics

Before launching into a summary of the findings, the reader would benefit from an understanding of who responded to the survey and how these respondents compare to what we know about Fort Collins residents according to the Census. Note that there were significant non-response rates to some of the demographics questions related to race and income. We've noted the response rate for each of the demographic questions on the instrument in Appendix A. The Census comparison provides an important snapshot to illustrate how well the responding sample to the study compares with the Fort Collins community.²

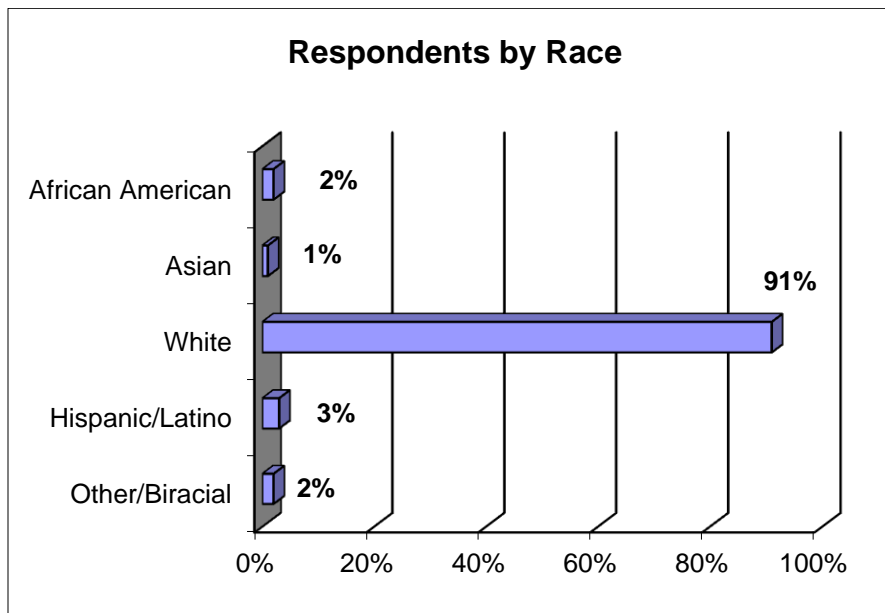
The responding sample was reflective of the Census by gender. The survey was completed equally by female and male respondents (50% each).

² The Census report for Fort Collins, Colorado can be retrieved at <http://quickfacts.census.gov/qfd/states/08/0827425.html>.

While 56% of respondents decided not to indicate their race, of those that did 91% were Caucasian and 3% were Hispanic/Latino. Two percent (2%) were African American and another 1% was Asian. These are the most represented groups in the Census for Fort Collins and fall in the margin of error of this study except for the Hispanic/Latino population which the Census reports at 10% versus this study at 3%. Again, there was a 56% non-response to the question on race.

Figure 1

Responding Sample by Race



Respondents were asked to indicate their highest level of education and the wide majority responded (90%). Of those that responded, 1% reported having not completed high school, 12% were high school graduates, 9% had some college or an associate's degree, 38% held a college degree, and 40% had attended college beyond a four year degree or held a graduate degree.

Table 1: Education Levels Reported

Range 4 to 24 years, Mean=16.32 years, Mode=16 years

Less than 12 th grade	1%
High School graduate	12%

Some College	3%
Associates Degree	6%
College Graduate	38%
Master's Degree	27%
Post Masters or Doctoral	13%

Ninety percent (90%) of respondents own a home and 10% indicated renting. Almost a third (28%) reported having children under 18 living at home.

On average, respondents had lived in Fort Collins for more than 25 years. The average household income based on the responding sample was \$83,891. The most common response was \$100,000 and the range was \$1200 to \$300,000. Income can be a sensitive question. Sixty-eight percent (68%) of survey respondents did not complete question.

Respondents to the survey were also asked to indicate their age. The average age was 56.83 years old (the most common response was 54 years old) and the age range of respondents was 18 to 94 years of age.

Cable Television Service

Of the 701 respondents, 53% indicated that they subscribe to cable television service from Comcast in the City of Fort Collins. This is consistent the national averages. As of September 2012, the National Cable Television Association (NCTA) reports that 56.4 million households subscribe to cable television service³, reflecting 51% of households in the United States.

Non-Subscribers of Cable Television Service

A follow-up series of questions were posed to Fort Collins' respondents that indicated they did not subscribe to Comcast (47%/N=323).

³ National operating metrics are updated annually on the NCTA's website and can be found at <http://www.ncta.com/industry-data>. The industry website has not yet posted 2013 data.

Non-subscribers were asked to indicate why they had chosen not to subscribe to Comcast. Of note, is that of current non-subscribers 26%, 1 in 4, indicated that they were previous subscribers to Comcast cable television service.

The primary reason for not subscribing was cited as cost (46%). The second most common reason for not subscribing was that the respondent subscribed to satellite television (37% of non-subscribers and 17% of the total sample).

Other common reasons for not subscribing was that they “don’t want cable television” (16%) or “don’t watch television” (13%). In the “other” reason category (15%) respondents indicated that they relied on over-the-air television, used the Internet to watch television or that they wouldn’t subscribe to Comcast because they only wanted a few channels and the option to subscribing a la carte wasn’t available.

Non-subscribers to Comcast cable television service were asked if they subscribed to any of the other services being offered and 28% did. Twenty-six percent (26%) indicated subscribing to Xfinity Internet service and 6% indicated they had Xfinity Telephone service.

Cable Television Subscribers in Fort Collins

Most subscribers indicated they had been subscribing to Comcast cable television service in Fort Collins for an average of 13 years. The range of responses was from less than 1 to 80 years (although this wasn’t possible) and the most frequent response was 10 years.

Subscribers to cable television services with Comcast were asked to identify the packages/features to which they subscribed. Respondents were asked to indicate all that apply. The majority indicated they had digital cable service (67%), 45% had “Limited Basic Service”,

57% had a service tier that included HD channels, and 22% indicated they subscribed to a premium channel like, HBO or Showtime.⁴

Cable TV Subscribers were also asked if they subscribed to Internet and telephone service from Comcast and 74% indicated that they had Xfinity Internet service⁵ and 48% indicated they had Xfinity telephone service.⁶ This runs consistent with national subscription rates, suggesting that Comcast has captured these markets in Fort Collins.

Two percent (2%) of cable subscribers reported “other” services received from Comcast, such as home security services, a specific sports package of programming or a “bundled” service.

The monthly average cost of all services residents receive was reported as \$139.27. The range of responses to this question was \$23 to \$315, with the most common reported cost figure as \$130. The following table illustrates average subscription costs by the type of services the respondent indicated receiving.

Table 2

Monthly Costs of Services for Comcast Subscribers

Overall Mean Subscription Costs	\$139.27
Mean monthly bill by service:	
Limited Basic Service Only (N=16)	\$41.45
Limited Basic Service w/Internet & Phone (N=33)	\$64.66
Digital Cable Services	\$149.94
A service tier that includes HD (High Definition) channels	\$158.30
Premium channels (HBO, Showtime, etc.)	\$179.21
Xfinity Internet service	\$152.44
Xfinity Telephone service	\$167.19

⁴ The National Cable Television Association current reports that 84% of all subscribers are digital subscribers. In Philadelphia this number is 77%. Retrieved from <http://www.ncta.com/industry-data>.

⁵ A 74% penetration on cable modem services is approximately 11% lower than the national average reported by the National Cable Telecommunications Association at <http://www.ncta.com/Stats/High-Speed-Internet-Customers.aspx>. The cable industry as a whole reports that 46.8 million homes of the 56.4 million (83%) that subscribe to cable television also have broadband services.

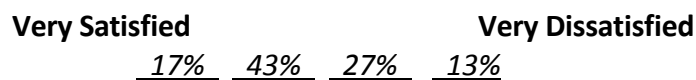
⁶ Approximately 47% of cable television subscribers also subscribe to telephone service from the cable company. Retrieved from <http://www.ncta.com/industry-data>.

Subscribers were asked if there were any channels not offered on the cable system that they would like to see added. Seventy-eight (N=78) indicated “yes” to this question. When asked to describe that program or service, most indicated a channel that was not on their tier or had once been on their tier but had been lost through a restructuring of the channels and creation of the digital tier. This new tier is more expensive and respondents indicated that they couldn’t afford the additional cost for the channel. Mentioned specifically were the premium sports packages such as the NFL Network or the Big 10 Network. Other channels mentioned were Turner Movie Classics and Al Jazeera Television. A full list is available from the City. Additionally, several respondents noted categories of programming rather than a specific network, such as more international programming or sports channels.

When asked to rate their level of satisfaction with the overall performance of their cable service a semantic differential scale was used and 99% or 363 subscribers responded to this question.⁷ Of those, 17% said they were very satisfied and another 43% indicated a positive score. In other words, 60% of subscribers trended in a positive direction on satisfaction. Thirteen percent (13%) indicated being “very dissatisfied” with Comcast cable service and another 27% indicated a negative trending score. Accordingly, 43% of subscribers responding to this question reported some level of dissatisfaction with Comcast cable services.

Figure 2

Overall Satisfaction with Comcast Cable Service



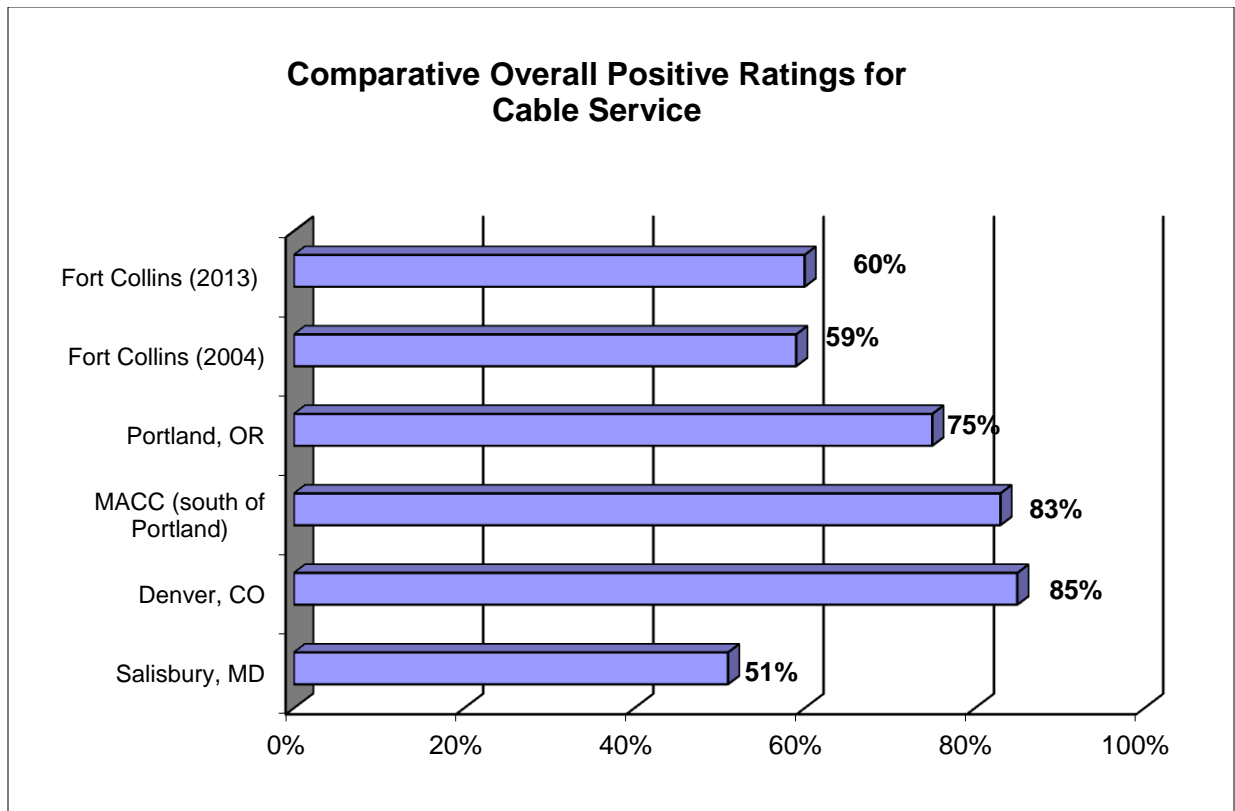
The following figure demonstrates how Fort Collins, Colorado ranks against other communities in recent ratings of cable service during community needs assessments. Positive overall ratings

⁷ Respondents chose on a continuum of 4 points between “very satisfied” to “very dissatisfied”

of cable service are compared against each other. Fort Collins residents are running somewhat less positive when compared to other Comcast communities tested.

Figure 3

Comparative Positive Ratings



Fort Collins respondents that indicated anything less than “very satisfied” were asked if there was anything the cable operator could do to **improve** their level of satisfaction with its cable services. Sixty-two percent (62%) of respondents provided an open-ended response to this question and the top 10 responses are included below in Table 3. Overwhelmingly, respondents would like Comcast to control rising prices and address cost issues (51%). This was followed by “improve reception” and “offer a la carte programming.”

Table 3

Top 10 Ways to Improve “Satisfaction” with Cable Service.

First Mention, Top 10 Responses (N=227/62%)

1. Reduce rates, control rising prices	51%
2. Improve quality of reception	11%
3. Offer a la carte programming options	7%
4. Improve Internet Service	3%
5. Unbundle services	3%
6. Poor customer service	2%
7. Tired of hidden fees	2%
8. Better DVR service	2%
9. Offer new promos to existing customers	1%
10. Need local CSR, phone number	1%

Customer Service

A series of questions were posed related to customer service in regards to cost of service, picture and sound quality, variety of cable programs available, location of the cable office and hours the office was open. Respondents were asked to indicate their level of satisfaction on a 4-point scale from very satisfied to very dissatisfied. The respondent was also provided the option of responding, “don’t know” or that the question was “not applicable.” Special attention was paid to service issues that received a greater than 20% “very dissatisfied” and “dissatisfied” combined score.

Table 4

Ratings on key areas of Comcast's Customer Service

Comcast Customer Service Areas	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know/ Not Applicable
Cost of your cable service	6%	20%	39%	35%	1%
Quality of the picture	40%	50%	6%	3%	1%
Quality of the sound	37%	57%	5%	1%	.3%
Quality of cable programs	23%	54%	15%	6%	3%
Variety of cable program packages offered	20%	42%	22%	13%	3%
Location of the cable company office	27%	49%	5%	3%	16%
Hours cable company office is open	20%	51%	5%	3%	21%

The tested area that received the lowest marks was related to the cost of service with 39% reporting being “dissatisfied” and another 35% reporting being “very dissatisfied.” In other words, 74% of cable subscribers reported negative attitudes about the “cost of cable television.”

Picture and sound quality received high marks with the wide majority of respondents satisfied with these elements of Comcast's service (90% and 94% positive respectively).

The quality of cable television programs were also described positively by the majority of respondents. Three in four (77%) indicated being “very satisfied” or “satisfied” with the quality of cable television programs.

The variety of cable program packages offered had 1 in 3 respondents reporting some dissatisfaction. Thirty-five percent (35%) indicated being “very dissatisfied” or “dissatisfied” with the variety of the cable programming packages offered.

Seventy-six percent (76%), 3 in 4, were positive about the location of the cable television office and 71% were positive about the hours the office is open.

Calling Comcast

Subscribers were asked if they had called Comcast in the last year, of those that responded (N=360), a wide majority of them had called the cable office in the last year (76%), or 3 in 4 subscribers. The top three reasons for calling included an outage/reception issue (38%), followed by a cable box issue (8%) and then a problem with the bill (8%).

Table 5

Reasons for calling Comcast cable

Top 8 Responses (N=273)

1. Outage/Reception issues	38%
2. Cable box issue	8%
3. Problem with bill	8%
4. Equipment issue	8%
5. Internet problem	7%
6. Lower rates wanted	6%
7. Upgrade package	4%
8. Installation	3%

When calling the cable company, 8% indicated that they received a busy signal. Additionally, when asked if their call had been answered by a customer service representative, including the time they were left on hold, within 30 seconds, 48% indicated that it had not. Both of these scores are higher than the federal and local customer standards that set busy signals at a 3% occurrence and hold times greater than 30 seconds at 10%.⁸ Important to keep in mind when reviewing telephone customer service performance is the respondent's identified reason for calling. The majority of calls were around issues within Comcast's control, such as problems with reception, understanding a bill or broken equipment. In other words, the better

⁸ The federal customer service standards for cable television can be found at <http://www.fcc.gov/guides/customer-service-standards>. Retrieved December 23, 2013.

performing the cable system, equipment and communication with subscribers the less call volume generated and subsequent better telephone response time.

When the phone call to the cable company resulted in reporting a problem, 54% indicated that it was resolved within 24 hours, 22% said it was within 1-2 days, 15% said it took more than two days and 8% said the problem was still unresolved.

Outages and Technical Difficulties

Cable subscribers were asked if they had experienced an outage in the past year that had lasted more than **fifteen minutes** while they still had electricity. A little more than half (51%) indicated that they had.

Those subscribers were then asked to estimate how many times they had experienced these outages in the last year. The range was 1-12 with the average customer experiencing outages reporting 2.85 outages, with the most common response of two outages.

Of those that had experienced outages (N=175), 75% indicated that they called the office to report the outage. Seventy-one percent (70%) described the cable company as “responsive” or “very responsive” to the outages. The other 30% indicated that they were not responsive to the outage.

Those that experienced outages were asked if the company had issued a refund or credit for outages that lasted more than 2 hours. Fifteen percent (15%) indicated that they had, but the wide majority (85%) indicated that they had not.

When asked generally about any technical difficulty, 15% of subscribers responding to the question indicated that they had experienced some technical difficulty. The most frequently mentioned technical difficulties described reception or picture quality issues, and other digital artifacts that were creating reception problems including pixilation, weak signals, and freezing

pictures across the digital channels. Other problems reported included challenges with the HD reception, audio problems, cable box not working, and Internet and telephone outages. A full summary of technical difficulties reported by subscribers is available from the City.

Service Calls and Home Visits

Subscribers who had an installation service within the last two years (N=180) were asked to provide feedback on the experience they had with the cable company during the installation process. Using the same scale in rating the other services, subscribers were generally positive about their service experiences. The most dissatisfaction expressed was with the ability of the technician to explain subscribing options, 22% or 1 in 5 reporting being “dissatisfied” or “very dissatisfied.” This was followed by 14% dissatisfaction with the available times offered for installation and the arrival time of the technician.

The respect for their property demonstrated by the technician, the arrival time, the technician’s professionalism and ability to explain and answer questions related to their subscription options had positive scores ranging from 63% to 72%.

Table 6: Satisfaction with Characteristics of Installation (N=91)

Installation Issues	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know/ Not Applicable
The available times for installation or service	20%	52%	11%	3%	14%
The arrival time of the service technician	23%	48%	10%	4%	14%
The ability of the technician to explain your subscribing options	22%	41%	16%	6%	16%
Respect for your property demonstrated by the service technician	32%	40%	7%	3%	19%

Communication Issues

Cable subscribers were asked to evaluate their cable experience as it related to communication issues. Generally cable subscribers were satisfied with the communication areas tested; however 1 in 5 expressed dissatisfaction with ability of the cable operator to explain and address billing questions and programming issues. Additionally, 1 in 3 (38%) expressed dissatisfaction with Comcast's managed communication on rate changes. This garnered the most negative responses (38% dissatisfied).

Table 7: Satisfaction with Characteristics of Comcast's Communications with Subscribers
(N=358)

Communication Issues	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know/ Not Applicable
The ability of the cable operator to explain and address billing questions	16%	39%	13%	10%	23%
The cable operator's communication with YOU regarding programming changes	12%	40%	13%	9%	25%
The cable operator's communication with YOU regarding rate changes	10%	32%	20%	18%	20%

Local Public, Education and Government Programming

Respondents were asked a series of questions about Fort Collins' Public, Education and Government channels: Channel 10, 11, 14 and 97.

Channel 10, Poudre School District, had 5% watching daily or weekly with another 14% watching once or twice a month. Another 28% watched once or twice a year.

Channel 11, CSU-TV, produced by Colorado State University had 4% watching daily or weekly and 14% monthly. Another 24% watched once or twice a year.

Channel 14, City Cable produced by Fort Collins, had 12% watching daily or weekly and 20% watching once or twice a month. Another 29% watched once or twice a year.

Channel 97, Fort Collins Public Affairs Network (FCPAN) had the 5% watching daily or weekly, another 12% watching monthly and 18% watching once or twice a year.

Table 8

Summary Viewership Table for PEG Channels in Fort Collins

Local Access Channels	More than 5 hours a week	Weekly, but less than 5 hours	Once or Twice a Month	Once or Twice a Year	Never	Don't Know
Channel 10 , Poudre School District	.3%	5%	14%	28%	49%	3%
Channel 11 , CSU-TV, Colorado State University	.3%	4%	14%	24%	55%	3%
Channel 14 , City Cable, Fort Collins	1%	11%	20%	29%	37%	4%
Channel 97 , Fort Collins Public Affairs Network (PAN)	1%	4%	12%	18%	61%	4%

To provide further perspective related to viewership, a few sample communities where needs assessments had recently been completed offer some selective comparisons. For example, Denver has a higher rate of viewership of its three PEG access channels. In Denver the PEG operating fee is double that of Fort Collins, so the channel is funded to produce more original programming.

Table 9

Comparative Weekly Viewership with other PEG Channels

Type of PEG Channel	Weekly Viewership Fort Collins	Weekly Viewership Denver	Weekly Viewership Philadelphia	Weekly Viewership Louisville, KY	Weekly Viewership Salisbury, MD
K-12 Educational	5%	7%	14%	NA	--
University Educational	4%	NA	14%	NA	--
Government	12%	25%	20%	19%	26%
Public Access	5%	10%	14%	14%	--
Total Weekly PEG Viewership	26%	42%	56%	23%	26%

These numbers, while on face may seem low; they in fact indicate a good level of viewership for local access programming and generally for most cable networks. Specifically, when considering the viewership of the access channels, it is useful to apply some standard principles of viewing audience measurement. The Nielsen Company is the primary measurer of media engagement in the United States. One of the numbers generated by Nielsen is referred to as CUME. CUME is an acronym that represents “cumulative audience.” It is defined by the television industry as the total, non-duplicated audience for a program or channel over a given time period. CUME is expressed as a percentage of the total television household universe (the audience measurements shown below have been adapted to reflect only multichannel video subscription households, roughly 92% of all households according to Nielsen). When measuring CUME, a viewing household is counted once no matter how many times the channel or program is viewed.

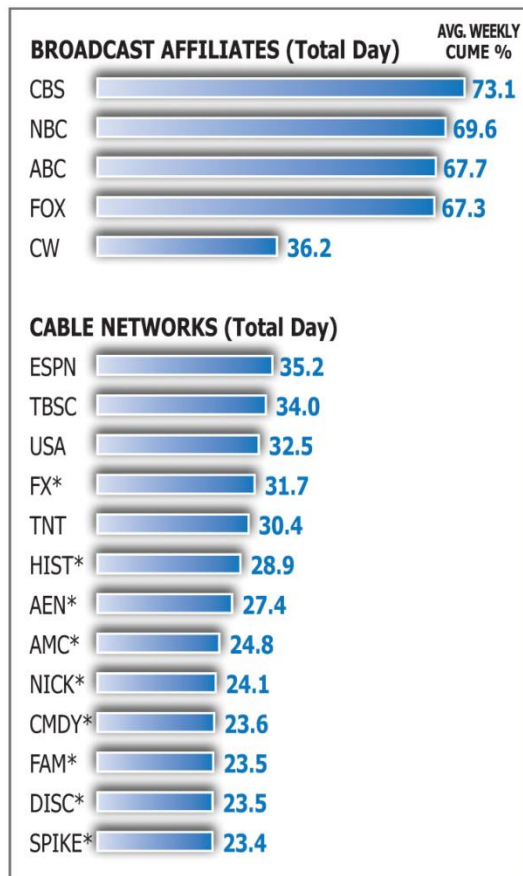
In Fort Collins, the combined weekly CUME reported by cable subscribers in our study of the public, education and government access channels is 2%. In other words, 1 in 4 cable subscribers report at least viewing the channels at some point in a given week. While this number may not on the surface seem like a considerable number of viewers, when one compares it against the weekly CUME of the most popular cable networks, one can see that in a universe of more than 300 channels, having 26% report they at least stopped on your community of channels at some point during the week has significant meaning.

This percentage coupled with the niche nature of cable television, where the vast majority of cable networks have relatively small, weekly CUMES and even the top networks have CUMES of approximately 23% to 35% of the total viewing audience as illustrated by the Nielsen data, is important.

Figure 4: Top viewed cable networks by average weekly multichannel video household CUME (cumulative media exposure) in percentages (4th quarter, 2011)⁹

Reach: Broadcast vs. Cable

While cable penetration (wired and unwired) currently stands at approximately 90% of TV households, no individual cable network comes to anything near that by the end of an average week. Not one cable network tops 40%.



Source: The Nielsen Company
Television Activity Report
NHI 4th Qtr'11
Estimates include Live+7 days

*Cable networks did not telecast during the entire daypart.

⁹ Television and cable trends are reported by the Television Bureau at http://www.tvb.org/media/file/TV_Basics.pdf. Accessed December 23, 2013.

While not a direct comparison because of the differing measurement basis (all multichannel video subscription households [cable, satellite, etc.] nationally versus cable television subscriber households locally), both represent cumulative weekly audience measurements which show that even the most popular channels will not garner a majority of viewing households in a large multichannel environment.

To offer additional perspective about cable ratings, the following chart illustrates the weekly cumulative audience exposure of several of Comcast owned or partially owned networks. When considering PEG viewership in Fort Collins, it is helpful to consider that viewership against other channels that are both distributed and owned by Comcast cable. This data, highly proprietary, is often difficult to acquire as public knowledge. Advertising sales are based on these numbers across key demographic groups. To create this chart, industry trade magazines, Nielsen data and cable network press releases were used. For example, Comcast owns the Bravo Network. In January 2014, the Bravo Network issued a press release when it hit a record high in the network's 33-year history with the viewership of the show *Desperate Housewives of Atlanta*. That show's rating was reported as 4.5 million, or a 5% rating.¹⁰ This was the record in 33-years of the Bravo network's programming. The press release didn't detail what the average weekly viewership of the network is, but you can imagine it is far less than that.

As one can see, the majority of Comcast's networks have a weekly average viewership rating of less than 2% and considering that the company's USA Network is **the** most popular cable network on television with a weekly average of 21%, rarely would one of the 300 niche cable networks available in a multichannel environment be likely to garner a majority of the viewers. In the cable television's industry history, it has **never had a majority of American television**

¹⁰ Coverage of the press release can be found at <http://tvbythenumbers.zap2it.com/2014/01/07/bravo-media-shatters-ratings-records-sunday-with-its-best-night-in-network-history/227413/>

households watching one of its networks. In fact, the industry's strength is its ability to tailor to niche interests like golf and science fiction as one can see below.¹¹

Table 10

Sample of Estimated Weekly Viewership of Comcast Owned Cable Networks

Comcast Owned/Partially Owned Cable Networks	Daily Average Viewership When Reported*	Weekly Average Viewership Estimate	# of Homes Available¹²	Cable Network Weekly Rating¹³
CNBC	196,000	1.3 million	96.2 million	1.3
Golf Channel	120,000	840,000	82.0 million	1.0
MSNBC	1.9 million	13.3 million	94.5 million	14.1
NBCSN	75,000	525,000	77.7 million	.7
Sprout	122,000	8.5 million	55.2 million	1.5
The Weather Channel	284,000	2.0 million	99.9 million	2.0
USA Network	2.9 million	20.3 million	98.6 million	21%

Accordingly, local access programming in Fort Collins can be seen as attracting a healthy number of viewers, with 26% of the cable households in the tested franchise area watching daily or weekly.

¹¹ NBCSN, September 20, 2013 at 75,000 a day. <http://www.multichannel.com/content/nbcns-scoring-big-total-day-gains-premier-league/145588>. Golf Channel, 120,000 day. <http://www.broadwayworld.com/bwwtv/article/Golf-Channel-Reigns-as-Fastest-Growing-Network-on-Television-20121004>. USA Network, August 24, 2013 daily viewership of 2.91 million <http://tvbythenumbers.zap2it.com/2013/08/21/usa-is-the-1-cable-network-for-the-8th-consecutive-summer/198761/>. CNBC, <http://variety.com/2013/tv/news/cnbcs-the-profit-in-the-red-after-week-two-ratings-tumble-1200575819/>. MSNBC, <http://stateofthemedias.org/2013/cable-a-growing-medium-reaching-its-ceiling/cable-by-the-numbers/>

Weather Channel, <http://www.buzzfeed.com/passantino/storm-breeds-as-the-weather-channel-launches-campaign-against> Sprout Network, <http://www.cynopsis.com/files/4113/4624/5396/SPROUT.pdf>

¹² Nielsen's cable network universe estimates can be retrieved from <http://tvbythenumbers.zap2it.com/2013/08/23/list-of-how-many-homes-each-cable-networks-is-in-cable-network-coverage-estimates-as-of-august-2013/199072/>

¹³ This is computed based on household CUME (viewing of 1 minute or more per week) as a percentage of the total number of potential households.

Access Channels Overall Features

Cable subscribers that reported watching channels 10, 11, 14 and 97 at least occasionally were asked to rate the quality of each channels picture, sound; as well as informational and entertainment value.

Channel 10, Poudre School District

When considering the ratings offered by those that had viewed Channel 10, the Poudre School District's access channel, 21% described picture quality as "excellent" and 40% indicated "good." Twenty-five percent (25%) indicated "fair" and 6% indicated "poor."

Sound quality was similarly rated with 21% indicating "excellent" and 45% indicating "good." Twenty-eight percent (28%) rated the sound "fair" and 6% indicated "poor."

Of note is that the Channel 10's picture and sound quality received lower marks than the overall picture quality rating given for Comcast programming. The positive scores for overall picture and sound quality were 90% and 94% respectively. This creates almost a 30 percentage point gap between Channel 10's rating and the overall system.

The informational value of Channel 10 earned the most positive rating with 18% indicating "excellent" and 50% indicating "good." Twenty-two percent (22%) described it as "fair" and 9% as "poor."

The entertainment value of Channel 10 was rated as "excellent" by 11% and "good" by 37%. Thirty-four percent (34%) indicated "fair" and 17% "poor."

Channel 11, CSU-TV, Colorado State University

When considering the ratings offered by those that had viewed Channel 11, CSU-TV, Colorado State University's access channel, 18% described picture quality as "excellent" and 50% indicated "good." Twenty-six percent (26%) indicated "fair" and 7% indicated "poor."

Sound quality was similarly rated with 20% indicating “excellent” and 43% indicating “good.” Thirty-two percent (32%) rated the sound “fair” and 5% indicated “poor.”

As with Channel 10, of note is that the Channel 11’s picture and sound quality received lower marks than the overall picture quality rating given for Comcast programming. The positive scores for overall picture and sound quality were 90% and 94% respectively. This creates a 22 percentage point gap between Channel 11’s rating and the overall system.

The informational value of Channel 11 earned the most positive rating with 14% indicating “excellent” and 50% indicating “good.” Thirty percent (30%) described it as “fair” and 7% as “poor.”

The entertainment value of Channel 11 was rated as “excellent” by 10% and “good” by 37%. Thirty-eight percent (38%) indicated “fair” and 15% “poor.”

Channel 14, City Cable, Fort Collins’ Government Channel

When considering the ratings offered by those that had viewed Channel 14, City Cable produced by the City of Fort Collins, 21% described picture quality as “excellent” and 51% indicated “good.” Twenty-three percent (23%) indicated “fair” and 5% indicated “poor.”

Sound quality was similarly rated with 20% indicating “excellent” and 45% indicating “good.” Thirty percent (30%) rated the sound “fair” and 5% indicated “poor.”

As with Channels 10 and 11, of note is that the Channel 14’s picture and sound quality received lower marks than the overall picture quality rating given for Comcast programming. Again, the positive scores for overall picture and sound quality were 90% and 94% respectively. While Channel 14 received the highest marks among the public, education and access channels, this reflects a 20-30 percentage point gap between Channel 14’s rating and the overall system.

The informational value of Channel 14 earned a positive rating with 21% indicating “excellent” and 55% indicating “good.” Nineteen percent (19%) described it as “fair” and 5% as “poor.” In other words, 3 in 4 subscribers that watch Channel 14 noted were positive about its informational value.

The entertainment value of Channel 14 was rated as “excellent” by 13% and “good” by 42%. Thirty-one percent (31%) indicated “fair” and 14% “poor.”

Channel 97, Fort Collins Public Affairs Network

When considering the ratings offered by those that had viewed Channel 97, the public access channel FCPAN (Fort Collins Public Affairs Network), 17% described picture quality as “excellent” and 46% indicated “good.” Thirty percent (30%) indicated “fair” and 7% indicated “poor.”

Sound quality was rated with 18% indicating “excellent” and 41% indicating “good.” Thirty-six percent (36%) rated the sound “fair” and 5% indicated “poor.”

As with the other access channels, Channel 97’s picture and sound quality received lower marks than the overall picture quality rating given for Comcast's service overall. Again, the positive scores for overall picture and sound quality were 90% and 94% respectively. Channel 97’s picture and sound quality is 63% and 59% respectively, this reflects a 27-30 percentage point gap between Channel 97’s rating and the overall system rating.

The informational value of Channel 97 earned a positive rating with 15% indicating “excellent” and 44% indicating “good.” Thirty-one percent (31%) described it as “fair” and 10% as “poor.” In other words, 1 in 3 subscribers that watch Channel 97 noted were positive about its informational value.

The entertainment value of Channel 97 was rated slight lower than the informational quality. Fourteen percent (14%) indicated “excellent” and “good” was indicated by 38%. Thirty-four percent (34%) indicated “fair” and 15% “poor.”

Other Local Programming Interests

Residents of Fort Collins that subscribe to cable were asked what type of local community based programming they would like to see more of on the system. Local Historical Programming had the most interest with 32% of respondents indicating they would like to see “more” of this category of programming on the system. The other top four categories of programming included City News and Services at 29%, Community News at 28%, Health and Wellness programming at 25%, and Fort Collins Community Events/Activities at 25%. In the “Other” category, subscribers mentioned a desire for CSU events and sports, local voting information, international news and shows about local innovations and enterprising.

Table 11: “Needs More Of” Access Programming

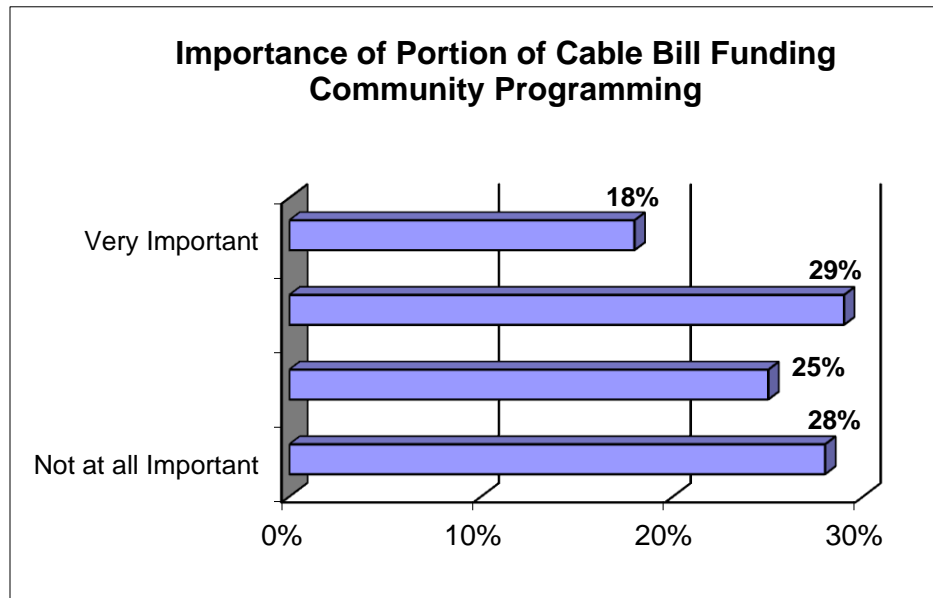
<u>18%</u> Public Safety Information	<u>15%</u> University Programs
<u>29%</u> City News and Services Programs	<u>25%</u> FC Public/Community Events & Activities
<u>13%</u> K-12 School Events & Activities	<u>22%</u> Local Arts
<u>22%</u> Local Sports	<u>28%</u> Community News
<u>12%</u> Local Business Programs	<u>13%</u> Government Meetings
<u>20%</u> Local Senior Citizen Programs	<u>32%</u> Local Historical Programs
<u>25%</u> Health/Wellness Programs	<u>16%</u> Sustainable Energy/Environment Programs
<u>4%</u> Other: (<i>please describe</i>) (N=14)	

Financial Support for Local Access Programming

A key area tested was the importance that a portion of the cable bill was dedicated to supporting the programming that appears on the local Fort Collins access channels. The majority of subscribers agreed that this initiative is important. Eighteen percent (18%) described it as “very important”, 29% important and 25% somewhat important. Twenty-eight percent (28%) said such funding was “not at all important”. In other words, 47% of residents surveyed indicated positive level of importance that a portion of their cable bill goes to support local, community programming and an additional 25% indicated some importance.

Figure 5

Importance of Financial Support for Local Access Programming



Subscribers were asked if they were aware that the Fort Collins Public Affairs Network (FCPAN) provided media training for City residents at no charge. Just 14% of cable subscribers were aware of this opportunity. Of those that were aware, 3% indicated that they had used the facility. When describing that use they indicated training classes, sharing news about community events and shooting video for a local non-profit.

Internet Access

All residential respondents were asked if they had Internet access in the home. Ninety-two percent (92%) indicated that they did. This finding places Fort Collins far ahead of the national average. The most recent Pew Internet and American Life adoption tracking data, which was last updated in September 2013, showed 26% of Americans had not adopted Internet service at home.¹⁴

¹⁴ <http://pewinternet.org/Infographics/2013/How-Americans-go-online.aspx>. Retrieved December 23, 2013.

The 8% of residents that reported not having Internet access were further examined. One finds in Fort Collins that households without Internet service are significantly more likely to be in older, without children in the home, have lower than average household incomes and rent their home.¹⁵

Additional Comments

All respondents were provided the opportunity to make final comments about Comcast cable service in Fort Collins and 41% of respondents used additional space provided at the end of the survey to do so. The comments were collapsed into categories. The top 10 comments included the following list

Table 12: Additional comments made by respondents

First Response, Top 10 (N=284/41%)

1. Cost issues/expensive/lower the rates	28%
2. Comcast is a monopoly	11%
3. Experienced poor customer service	10%
4. Company is doing a good job	9%
5. Prices keep increasing/no added value with rate increases	6%
6. Need a la carte programming selection	6%
7. Not available in my neighborhood	3%
8. Need better internet options	3%
9. Don't like Comcast	1%
10. Existing customers not a priority	1%

Online Residential Questionnaire

After the random written survey was completed, a questionnaire was placed online to gather information from residents about their cable television experience. The opportunity to complete the survey was promoted on the City's website and on City Cable, Channel 14. While the information is anecdotal, much like a town hall, it does offer the observations of an

¹⁵ An analysis of variance was used to determine significant relationships and a $p < .05$ used.

additional 868 Fort Collins residents and provides another snapshot of cable needs and interests.

Of those that completed the online survey, 69% were cable subscribers. Of the 31% that did not subscribe to Comcast, 21% were satellite subscribers.

The primary reason for not-subscribing among these residents was again cost, cited by 68% of non-subscribers. Other reasons include “not having time to watch television” or relying on over-the-air television to meet their viewing needs.

Like with the random residential study, many non-subscribers (47%) reported having other Comcast services, primarily Internet service, followed by telephone service.

Among subscribers, like in the random written survey, the digital cable package was the most popular with 64% reporting that they subscribed. Additionally, 79% indicated that they also subscribed to Internet service from Comcast. The average monthly bill reported in the online questionnaire was \$231.06.

Similar to the findings in the random survey, the online questionnaire asked if there were additional channels they would like to see added and 35% indicated “yes.” These were often described as channels that were either premium offerings like the Big 10 Network or the NFL Network, or channels that had once been in a digital package but had been realigned to a different and often more expensive tier.

In the online questionnaire, dissatisfaction with cable television service was much higher than in the random survey; with the most common response to a query on overall satisfaction was “dissatisfied” noted by 34% of subscribers and “very dissatisfied” noted by 26% of subscribers. In a self-selected survey, it is likely that those with more negative experiences with the cable television are likely to respond, this is why the random, written survey among Fort Collins

households was critical. Even so, it is important to provide an opportunity to offer observations about Comcast across a broad spectrum of residents.

Online subscribers were generally very positive about picture and sound quality of Comcast service (86% and 84% respectively), but significantly negative about the cost of cable television and about the limited number of programming packages offered by the cable company. As in the random survey, this group of vocal residents would like to see more options when choosing what channels are included in their cable television package.

Eighty-eight percent (88%) of the online respondents had called the cable company and while they didn't get a busy signal, 65% were left on hold for more than 30 seconds. While this is a higher number than in the written random, survey it describes a similar experience that was noted among those respondents.

Forty-nine percent (49%) of online respondents reported some type of technical difficulty in the last year with their Comcast cable service. Additionally, this group was also likely to report dissatisfaction with communication from Comcast at the time of installation, programming line-up changes and most significantly rate changes.

Viewership of the public, education and government channels was slightly lower among the online respondents; however financial support for these channels was described at some level of importance by 67% of respondents.

In final comments, online respondents (N=422) described significant frustration and angst over cable television rates, events around poor customer service, and poor telephone response times.

Again, the data provided in the online survey is anecdotal and is not considered with the random, written survey conducted for this needs assessment.

Residential Needs Assessment Conclusions and Recommendations

The following series of conclusions and recommendations are based on the concepts and issues emerged during the random, residential survey of cable television needs and interests in Fort Collins, Colorado.

- 6. Subscribership and Non-Subscribership** – The City of Fort Collins has a strong engagement with Comcast services with 53% of households participating in this study reporting they subscribe to the cable television services offered. This is consistent with the national average where just over half of households in the United States report subscribing to cable television.

Among non-subscribers to Comcast in Fort Collins, the primary reason is related to the cost of service (46%). Thirty-seven percent (37%) of non-subscribers reported subscribing to a competing satellite service (17% of all respondents surveyed). Overall the findings suggest that to further engage non-subscribers as Comcast moves into franchise renewal it would need to offer new/alternative programming package options at a variety of more affordable rates. This would address concerns about costs, rate increases without perceptible change in service levels (price/value concerns) and a la carte channel selection. It is important to note that 28% of non-subscribers to cable television service do subscribe to one or more of Comcast's other products available in Fort Collins (Internet, telephone or home security).

- 7. Subscriber Satisfaction** – Sixty percent of cable subscribers (60%) are generally satisfied with their overall cable service, with 43% indicating a positive trending score and 17% indicating "very satisfied." The other 40% of subscribers trend negative with 13% of these "very dissatisfied." While these scores show a significant negative opinion, they are consistent with some of Comcast's other tested markets, although lower than several conducted in the last 36-months. Interestingly, when the City conducted its

2004 needs assessment, the positive rating of cable service was at 59%. In other words, in the last 10 years the satisfaction level with cable television service has moved 1 point forward. This speaks to the need for more frequent studies of customer satisfaction during the franchise period so that improvements can be made based on customer feedback. It also speaks to little achievement by Comcast in improving customer satisfaction with its services over the last decade in Fort Collins.

Those that rated cable service more negatively indicated that the primary reason was related to high rates or increasing rates. More than half (51%) of subscriber respondents who trended less than very satisfied indicated that they would have a higher rating if Comcast offered lower rates. An additional 11% indicated that their satisfaction would improve if the reception was better and 7% desire a la carte programming options. All of these areas, particularly the concerns related to reception, are deserving of immediate attention by Comcast and would likely drive higher customer satisfaction with the service.

- 8. Technical Issues** – While most cable subscribers indicated they were satisfied with picture quality (90% positive), 15% of subscriber respondents indicated that they had experienced picture clarity or reception problems. These problems with reception are the second most common reason subscribers report lower overall satisfaction with cable television service and the primary reason they call customer service. A number of subscribers who had picture quality problems indicated “weak signals”, “pixilation”, ongoing channel reception difficulties and then mentioned specific channels. A full listing is available with the City.

Additionally, 51% of respondents indicated they had experienced a cable outage in the past year for more than fifteen while electricity was on and 30% (roughly 1 in 3) described the responsiveness to the outage by Comcast negatively.

Both technical difficulties and outages resulted in calls to the cable company, adding call volume and as a result put pressure on the telephone response time. Improvements to technical operations will likely reduce call volume and ease the 48% of cable customers who called reporting hold times in excess of 30 seconds. This is significantly out of the range of federal customer service standards for cable television.

- 9. Customer Service** – While cable subscribers generally are satisfied with Comcast's service, there are certain areas that need enhancement, and areas where subscribers' responses indicate non-compliance with Federal Communications Commission (FCC) Customer Service Standards. These are:

Telephone Answering Standards – Seventy-six percent (76%) of cable subscribers had called the cable company in the last year and the top three reasons for calling were a service issue. Eight percent (8%) of subscribers indicated that they received a busy signal when calling the company, which is 266% greater than the three percent (3%) level specified by the FCC as the desirable customer service standard. Additionally, 48% indicated that their call had not been answered within thirty (30) seconds, including the time left on hold, which would be almost 500% greater than the tolerance allowed (10%) under the FCC Customer Service Standards. Primary reasons for calling were related to service/reception issues, an issue with the cable box, and a problem with the bill.

Outages and Restoration of Service – Approximately 1 out of every 2 cable subscribers (51%) reported they had experienced an outage lasting more than fifteen minutes while electricity was still on in the last year. The average number per customer was 2.85 and the most common reported number was 2. Seventy-five percent (75%) of those experiencing an outage called the cable company to report it and while 70% were positive about the

cable company's response to the outage, 30% were not. Important to franchise renewal proceedings are several customer service issues around restoration of service, the satisfaction level that subscribers have with the length of time it takes to restore service, telephone response time and credits or refunds for down periods on the cable system.

Communicating with Cable Subscribers – Thirty-eight percent (38%) of subscriber respondents indicated they were “dissatisfied” or “very dissatisfied” with Comcast’s communications related to rate changes and 22% with programming changes. Comcast needs to review and then improve how changes in programming, rates and service are communicated to cable subscribers and in what platforms they communicate these issues. For example, the company might consider launching a broad television-based information campaign when channel realignments or rate increases are announced. This would likely reduce some of the subscriber respondents who called Comcast about a billing question which in turn creates pressure on their telephone response times potentially contributing to the findings of not being in compliance with FCC customer service standards. Additionally, the communication during a new install was rated negatively by 22% of subscribers when asked about the technician’s ability to explain subscribing options.

Each of these are areas that we recommend as focus areas with Comcast in franchise renewal to see what improvements can be made to resolve the concerns indicated by subscribers and to work to enhance the means of monitoring these issues during the next franchise term.

10. Access Channels and Viewership – A significant portion of subscribers reported regular viewership of Fort Collins’ local access channels 10, 11, 14 and 97. Twenty-six percent

(26%) of subscribers reported watching on a daily or weekly basis. While these percentages may at first appear low, it is important to keep in mind that cable television's business model is rooted in niche channels rather than mass appeal channels. As an example, one of the top overall cable networks, ESPN, typically has a weekly cumulative audience of 35% of all television households. While not a direct comparison because of the different measurement basis (national multichannel video subscription versus local cable television subscribers weekly viewership), the 26% of Fort Collins subscribers that report watching local access programming on a daily and weekly basis should be seen as viable and healthy cable television viewership and a valuable part of Comcast's cable service. Additionally, PEG channels in Fort Collins have a much greater viewership than several of Comcast's owned cable networks, such as CNBC and Sprout.

Additionally, subscribers indicated a strong level of importance that a portion of their cable bill continues to go to cover the cost of programming on these channels. Eighteen percent (18%) indicated it was "very important" with an overall 72% expressing some level of importance for this funding.

Overall, the results from the survey show a high level of interest in local access programming, indicating that a renewed franchise should have strong support for continuation and enhancement of access programming and distribution. Such enhancements should occur in a variety of areas, most specifically ways to improve the picture and sound quality so that it is rated on par with the other channels on the system, better programming and services information about the channels, ensuring the channels are integrated into the system in a way that puts them on a level playing field with other channels and enabling the generation of greater amounts of programming in the categories specified.

B: Communities of interest and other stakeholders' needs as related to cable television.

INTRODUCTION

The City has been conducting a needs assessment study to determine the current and future cable communications-related needs and interests of the Fort Collins community. The needs assessment process has included, for example, residential and non-residential questionnaires, workshops and a community-at-large meeting. Numerous responses that have been submitted by the participants have been analyzed by the City. The process was structured and implemented in ways to disseminate and gather information and analyze and determine the cable communications-related needs and interests of this community.

There are approximately 150,000 people in the City. At one time Comcast was serving approximately 31,000 subscribers-this number should be updated by Comcast to the City. Overall, the needs that Telecommunications Research Corporation ("TRC") has ascertained in Fort Collins over the past several months are consistent with trends in the cable industry. Today, communications-related needs increasingly cover a variety of data, video and voice services. Particularly in the case of government, schools and business users, and for a growing segment of residential consumers, needs indicated today typically go well beyond just video information and entertainment to services such as high speed data communications.

In today's telecommunications environment, traditional needs such as video entertainment services have also been supplemented with electronic access to government information and the provision of educational programs for local schools. The needs identified through the study are many and varied, ranging from customer service issues to enhanced broadband applications. These needs have a very important bearing on the type of cable communications infrastructure that needs to be maintained within the Fort Collins community. We believe that a number of these needs may be able to be satisfied through the cable franchise renewal negotiation process.

During the course of the community needs assessment process, our work focused on various broad areas of concern, including, for example:

- Existing and potential future uses of a cable communications system as determined through the methodologies employed in this study. The methodologies were designed to cover broad and diverse communities of interest.
- Consumer satisfaction and dissatisfaction regarding numerous cable television customer service issues as expressed during the Town Hall Meeting (for example, cost and other issues of a consumer nature). It is important to also note that subscriber needs and attitudes towards cable communications services are many and varied. Consequently, subscriber satisfaction levels with the system can change based on system conditions, service levels and rates.

This report summarizes our findings and provides recommendations for the City to consider in its franchise renewal discussions with Comcast. The report focuses on both the existing capabilities and offerings of the cable system within the City and what type of system and services might meet the future needs and interests of the City and numerous diverse communities of interest.

METHODOLOGY

Overall, the needs assessment study was designed to gather information and analyze it in both a qualitative and quantitative manner to determine the cable communications-related needs and interests of the community as a whole and also those of a number of different communities of interest within the City. Those communities of interest included, for example, residents of Fort Collins, City government, Non-Profit and Business Groups.

Workshops and one community-at-large meeting were held. Those meetings covered a broad range of cable communications-related topics, including factors shaping the cable franchise renewal process, evolving cable communications technologies, new broadband services, organizational communications concerns and the overall role of the City as the franchise administrator.

As indicated above, specific communities of interest within the City were targeted because of their diversity and potential reliance on the cable communications network. Both needs and interests were analyzed. These needs and interests were reviewed as they apply to both current and projected future cable system operations. In today's evolving cable communications environment, such needs are typically well documented for the near term, but spring more from strategic planning for the longer term. Since a renewed cable franchise must meet the future cable-related community needs and interests over the duration of a new franchise term, while taking into account the cost of meeting such needs and interests, it is easy to see why cable television network architectures must be highly flexible to meet projected future needs.

FOCUS GROUPS

Business Community Focus Group

The Focus Group for the Business Community was held on Wednesday, October 2, 2013. Invitations were sent to numerous organizations and entities. Lists of those to whom invitations were sent and those who attended are included as an exhibit to this Report. Invitations were sent to several organizations including the Chamber of Commerce, the North Fort Collins Business Association, South Fort Collins Business Association, Legislative Affairs (LLA - 27 members) and Work Space Innovations, Front Range Internet and Innosphere.

Attendees included Front Range Internet; Kevin Jones from the Chamber of Commerce where he is the Business Advocacy Coordinator; and Andres Galvador, Carson Hamlin and David Young from the City of Fort Collins.

Kevin sent the invitation to the Local Legislative Affairs Committee. Businesses are concerned with internet connectivity, the role of the Futures Committee with the City and attracting and retaining businesses such as Woodward Governor. Woodward Governor is actually building a multi-acre campus which could house 12 buildings.

Front Range Internet was very vocal in a constructive manner during the Focus Group. Their view was that the City should not sign the Franchise Agreement or a Franchise Extension with Comcast. They are concerned that Comcast will drive down the price of internet service to a level where competitors cannot survive and then will increase prices.

One of the speakers from Front Range Internet used to be with Microsoft. He believes that insufficient support of nodes and degradation of service to residential networks will occur when Comcast is not motivated to update its network. He believes that Colorado SB 152 should be nullified by the City so the City can consider being a competitor in the telecommunications area.

While he would like to see Fiber to the Home, he believes Comcast does not want to spend the money with CSU or in the City. He foresees a day when streaming media is the future and people will watch their television via Hulu and Net Flix. Not only would this raise issues for whether any City could franchise Comcast, but it would also result in a reduction of a revenue stream to the City which currently receives about \$1.4 Million in Franchise Fees from Comcast per year.

The view of Front Range Internet is that IPTV is too late to market and limits the number of televisions a person can have in their home. With multi-generational families living together, more television sets will be needed. Companies like Aero are coming to Denver which also provides competition. Comcast, according to Front Range Internet, has not upgraded their infrastructure to sufficient levels. Although Comcast has upgraded for backhaul and some of its system, Front Range Internet thinks more needs to be done.

One of the attendees does not like the packages from Comcast. He would like to see a la carte programming so people pay only for channels that they want. He has been frustrated by the wait times of the Comcast Customer Service Representatives. By example, an attendee mentioned that, in Seattle, when phone services goes down, internet goes down and it takes 4 to 5 days for a technician, as well as there being number of portability issues.

One of the attendees does not think that CenturyLink can compete effectively with Comcast unless it utilized streaming media, rather than IPTV.

In summary, Front Range Internet would like to see SB 152 annulled, would not suggest a long term extension, would require Comcast to have Service Level Agreements with five nines of reliability, provide credit to customers for service issues, see the City receive revenue via a tax on internet services and not renew the City Franchise. Their view is that Comcast won't leave and might be more motivated to execute a favorable agreement.

Discussion occurred regarding the possibility of requiring Comcast to build-out a certain amount of the City and to relax the current build-out requirement in City Codes for other competitors. In this regard, Carson Hamlin expressed a concern that new providers might cherry-pick the City.

From Kevin Jones' perspective, businesses do not care that much about video. They are more concerned about access to broadband.

CSU Student Housing contracts with a company other than Comcast for video services. The perception was that Comcast wants to be paid by individual customers, rather than by each housing unit or complex since it is more lucrative.

The City is a partner with Platte River Power Authority ("PRPA"). It was brought up that the City should explore future opportunities with PRPA to deliver services at price points that work. Discussion then occurred about potentially giving Comcast a 12 month to 3 year extension, rather than 7 to 10 years.

Some attendees believe that, if the City got rid of SB 152 and used PRPA, Gig U could become a reality. Discussion also occurred about advocating for a local provider -- which is more of a local business entity rather than Comcast, so that revenues could come back into the City rather than going to shareholders of a national corporation. The possibility was also brought up about the City issuing RFPs. A lengthy discussion then occurred regarding the requirements of the Cable Act and that it is very difficult to deny renewal of a Franchise absent specified criteria as set forth in the Cable Act.

Evidently, Longmont and Estes Park voted out SB 152 or opted out of it. Consideration is being given as to whether Front Range communities will band together to try to overturn SB 152 at a State-wide level.

A request was made to examine why CenturyLink pays tax on internet service, but Comcast may not pay such tax.

Also, it was requested that Comcast provide as a courtesy the City with a list of free accounts to City Buildings, Schools and Libraries and other users of Comcast.

Non-Profit Focus Group

When governments and the private sector downsize and consequently prior levels of resources and funding may not be available to meet the needs of diverse groups such as the elderly, unemployed and the undereducated, there is a significant strain on social and community service organizations (non-profits) to do more with less. Communications services can help assist these groups and fulfill their mission statements and goals.

Such organizations have a need to communicate efficiently and effectively in order to maximize time and use limited resources. However, because of these same limited resources, they often are unable to procure the networks and services necessary to create the most efficient and effective communications architecture.

A Focus Group was held on Wednesday, October 2, 2013 for the Non-Profit Community. Invitations were sent to a number of organizations. A list of those organizations and those who attended is contained as an exhibit to this Report. Those invited included Fort Collins Senior Center, Cross Roads, Beet Street, Community Foundation, United Way, Project Self Sufficiency, Sexual Assault Victim Center, Interfaith Hospitality Network and CSU Housing and Dining.

Those in attendance in the Non-Profit Focus Group included two constituents who are concerned about over-the-air broadcasting, a representative from a Safe House for Domestic Violence, a representative from United Way, CSU Housing, the CIO of the City, Andres Galvador, Carson

Hamlin and David Young. During the course of the meeting, another person joined in process as well.

United Way is understandably frustrated because, according to this organization, Comcast has operations within 30 feet of their location at 425 Pine Street. United Way would like to receive internet service, with reliability and redundancy. This organization works closely with disaster relief and provides an additional source of information through United Way 211. This is particularly germane with the flooding in the City and County, in addition to the fires which occurred in the last year.

United Way does not understand why Comcast cannot provide service to two large buildings which will have Senior Rooms and Townhomes when they were literally close by.

The Safe House is particularly concerned about internet and telephony service. While they house victims of domestic violence, including men, women and children, they expressed no need for television service. The Safe House can sleep up to 104 and average about 70 people per night. Each room has 4 beds.

A representative of CSU attended this Focus Group. CSU uses Campus Televideo and has 6,000 to 7,000 student customers. Comcast used to be a provider, and the current contract with Campus Televideo has 3 to 4 years left on it. It is interesting that freshmen are less interested in video via television because they get their video via streaming. Stakeholders believe that CSU would be a natural market for Comcast.

With respect to CSU, there were concerns expressed about CenturyLink speeds although telephony and internet are pretty good. There have been outages where the system goes down.

The two attendees who spoke with respect to off-air broadcasting were concerned because they get their off-air stations from Denver and Wyoming. One of them would like to see a very basic

package from Comcast with about 15 channels and a low price. This person brought up that Aero charges about \$8.00 per month.

Evidently, in order for a non-profit to utilize the City Channel 14, the non-profit must have a direct funding relationship with the City.

United Way was very interested in the Comcast Internet Essentials Program. This Program provides internet service for about \$10.00 per month and a reduced \$150.00 price for a computer for families that are on free or reduced lunch. This Program is the result of an agreement reached between Comcast and the FCC and was a condition of that agreement when Comcast bought NBC.

There was significant interest in the City retaining its 5 PEG Channels – Channels 10 and 11 for Poudre School District and CSU, Channel 14 for the City, Channel 96 for Aims Community College (although the City may want to use this Channel for other uses) and Channel 97 for FCPAN – Public Access Network.

City Departments Focus Group

A Focus Group for City Departments was held on Thursday, October 3, 2013. Representatives of many Departments participated in this Focus Group. Invitations were sent to Building Services, Cable 14, the City Clerk, Community Services, CPIO, Economic Development, Engineering, Finance, Fire, GIS, Human Resources, IT, Library, Museum, Police, Purchasing, Recreation, Risk Manager, Streets and Utilities. There were 31 attendees from various City Departments.

PRPA has been a provider of fiber and a partner with the City for many years. It also leases fiber to CSU and Hospitals. The City does not utilize fiber from Comcast for an I-net.

With respect to Cable Channel 14, the City extensively programs on this Channel. The schedule is vast, is a very necessary resource for the City, and the City needs to retain this Channel. Channel 14 needs high definition capacity. Much of its equipment is in high definition, but there is a need for additional equipment and a PEG Grant to fund it.

The Parks Department needs video conferencing. Additionally, this Department, which has six locations, would like to have security cameras linked together to provide additional public safety. The Parks Department also has a need and could utilize a scrambled channel since the department locations are spread out in the City. This would provide a platform for internal video training without City employees having to travel to other locations.

The Fire Department and Police Department use PRPA fiber. There are 14 Fire Stations and 2 Police Stations. One Fire Station is located outside the City in Larimer County. Currently, video conferencing is used for training purposes and internal communications.

Risk Management would like to also see additional security cameras installed as a bi-product of the Franchise negotiations. They would like information to go back to the Police which would help with real time or closer to real time usage.

It was indicated during the presentation that Comcast is required to maintain a \$50,000 Letter of Credit. This benefits the City in many ways and should be kept during this process.

Equipment is needed by the Community Service Department. This Department currently uses Comcast Business Class Internet. They believe they are paying at the regular retail rate.

From the Lincoln Center's perspective, Comcast has been a great partner. Comcast has been responsive and worked closely with the Lincoln Center for quite some time. The Library also indicated that Comcast has been excellent to work with.

The type of service provided by Comcast varies from facility to facility. In some instances, Fire Stations and Police Stations receive free service, in others they do not. Thus, it will be important from a video perspective to obtain a list from Comcast of the free drops currently provided by Comcast. It sounds as though the Cemetery Department might have to pay for service for internet usage.

The Utilities Department receives a minimal number of free drops. It was shared that the Comcast Account Representative for Utilities has been good to work with.

From an overall standpoint, the Library would like to see more affordable internet service for the public. This is not surprising as the Library and the City work to bridge the digital divide. There are certainly those people who cannot afford a computer and a monthly internet bill. In this regard, Comcast does provide via its Internet Essentials Program opportunities for families who are on the Free or Reduced Lunch Program to obtain a computer for about \$150 and internet service for about \$10 per month.

It appears from comments that some of the Comcast System is older and some of the infrastructure is newer. The City has areas where it would like to have undergrounding and other areas where Comcast owns the poles. Although upgrading has been done, it was not clear whether it occurred on a City-wide basis or only in specified areas.

During the Needs Ascertainment Process, it became evident that people would like to have Comcast provide a Basic Lifeline Tier at a very modest cost. Evidently, during the previous Franchise negotiations, the City Council wanted Comcast to advertise such a tier. The Basic Tier currently offered by Comcast is in the \$23 range and is more expensive than people would like. A citizen who called Channel 14 complained that when they inquired about such a Basic Package, they were told “it did not exist” and were directed to more expensive options. This is very frustrating for the City.

A representative from the Utilities Department discussed the issue of Energy Efficiency. He would like Comcast to provide, on a 24/7 basis, set top boxes that meet industry guidelines and conserve energy. He is concerned not only about efficient energy use, but load management as well. From the Utilities Department perspective, he would like to see the City become an aggregator. It is important to note that during the Town Hall Meeting, this issue was also raised by an electrical engineer. Comcast responded that it is working on meeting industry guidelines and providing set top boxes to meet industry standards.

The Parks Department is interested in reigniting the advertising partnership with Comcast. Since people have left Comcast who used to be the point of contact, the discussions have not been restarted. It was suggested by the Moderators of the Workshop that Comcast be contacted in this regard.

The question then arose as to whether the City could charge fees or taxes on Internet Service. The Moderators shared that, under the Cable Act, Local Governments cannot collect Franchise Fees on Internet Broadband Services. They also indicated that this is a very jurisdictional and state specific question that would need more research since it is very complex. In some jurisdictions, Local Governments charge utility taxes and/or business and occupation taxes on providers of voice and video services. The question was to whether taxes can be placed on internet services is a separate issue depending upon both Federal and State law.

Discussion then occurred with respect to City Code and Build-Out requirements. There is a concern as to the shallow burial depths of Comcast's System. When coax and fiber is buried at 18 to 24 inches, there is less of a chance it will be dug up. Additional work needs to be done to address burial depths of electric utilities and see how Cable lines and facilities correlate in this regard.

There is also interest from the Utilities Department to explore opportunities for what has been done in other jurisdictions where companies such as Google and Allo have provided backbone infrastructure and are a source of potential competition. This is in keeping with the GIG U infrastructure possibilities which the City is considering in a separate project.

With respect to the Office of Cable Television, there is an additional need to be met with respect to having more local origination programming in the City. Channel 14, to its credit, has for many years done more despite having less equipment and budgetary constraints. In the context of the renewal, this is the time to negotiate for replacement of and additional equipment and increased funding for Channel 14. Even with the existing limitations, Channel 14 has received several programming awards.

City staff makes programming available from approximately 9:00 a.m. till 10:00 p.m. on many days. There is a definite need for new and improved equipment as well as replacement equipment throughout the life of the next franchise. A new and renewed franchise must contain sufficient capital funding from Comcast to meet the needs of the community, taking into account the cost of meeting such needs and interests.

Channel 14 has entered into an Intergovernmental Agreement with Larimer County. The City televises County Commissioner Meetings on a regular basis. Additionally, the City at one time entered into an arrangement with Poudre Valley Hospital as well. As indicated by the representative of Channel 14, "the demand for local programming grows all of the time."

City Departments have a need to communicate their pertinent information to Channel 14 for dissemination purposes. The City also has a need for Comcast to provide Public Service Announcements at no charge to the City and at reasonable hours. There is a need for the new franchise agreement to address what is a PSA, how much time will be available on the system for PSAs and the hours during which the PSAs will be carried.

An electronic TV Guide for Channel 14 and other PEG Access channels would provide helpful information to the residents of Fort Collins. The City wants Comcast to significantly participate in airing local programming.

The IT Department provides communications support for many other City Departments. Access to high speeds is critical. This provides not only faster throughput, but creates an environment which fosters telecommuting.

While some people at the local level have been very good to work with at Comcast, the City is frustrated by having to work through a maze of departments and people. Thus, an increased local presence by Comcast is a very important need which was identified in the context of the City Department Focus Group. Throughout any new franchise term, there needs to be a local office open during convenient normal business hours and a local general manager who is a go-to person and who can respond promptly to City needs. This is not a criticism of anyone – it is an identified need which must continue to be met.

Given the fires and floods in Northern Colorado, with respect to Fire and Police, the City has a need to be able to communicate effectively and efficiently with other jurisdictions, including Larimer County, Longmont and Loveland. Also, working with Greeley could address important public safety communications needs for the City, given its location in Northern Colorado. Thus, the prospect for interconnection of an I-Net or cable system is a very important one. With an interconnected system in place, the City would be able, in a matter of seconds, to transmit data which could provide vital information to protect First Responders including Fire and Police and the public at large.

Another discussion item during the Needs Ascertainment Process was the need for Video-on-Demand for Government Access programming. In this way, City staff as well as members of the public would be able to request training videos, City Council Meetings, and other government provided telecasts when it works best for them from a scheduling standpoint. It should be noted

that in the CenturyLink Agreement in El Paso County, Colorado, CenturyLink is required to store and disseminate about 25 hours of programming for PEG purposes so that government Video on Demand subscribers will be able to select and watch programs on a program-by-program basis.

Fiber Links

Other identified needs include extending PRPA's fiber optic network to locations to be designated by the City. The transmission of video, voice and data over the fiber optic network could be key in order to meet the City's needs during the next franchise term. Connectivity among the City and other jurisdictions would also be of great benefit to City government, schools and public safety agencies. Funding may be needed to provide fiber to certain locations, as well as to supply terminal interface equipment. Future network applications may include enhanced uses of the Internet and on-demand video streaming.

Regional Communications Strategy

As Comcast is the principal provider of cable services along the Front Range, opportunities for regionalization may exist. There is an opportunity among cities to improve the delivery of services and further relationships between local governments and their residents. By working together, local governments can build upon available resources and create efficiencies of operation. In that regard, the City may have an interest in regional broadband applications (i.e., voice, video and data) with neighboring communities.

There are economies of scale which could be gained by utilizing existing communications infrastructure. One of the challenges will be to develop a strategy of regionalization which works for the cities and Comcast. One would hope that the cable company would be willing to look at the possibility of interconnecting not only its individual cable systems, but also I-Nets as well, so that cities and schools could build upon existing technology. For instance, given the current heightened sense of interest in homeland security issues, regional interconnection could provide

additional critical links for law enforcement personnel. Another example would be that teachers and students could benefit greatly from distance learning that could cross municipal boundaries.

Given the synergies between the City's vision and Comcast's infrastructure, one would think that there would be several commonalities of interest. As a regional cable/fiber optic infrastructure continues to evolve, perhaps there could be cost savings for cities.

Local governments have traditionally focused their efforts on providing services to their constituents within their municipal boundaries. Given the changes in mindset that have occurred in this country since September 11, 2001, it still remains an opportune time for the City and Comcast to explore regional communications applications.

Additional Matters of Interest for the City

As noted above, it appears that Fort Collins could benefit from a regionalization of the Comcast cable systems. Given the number of Comcast cable systems in the area, the City could realize efficiencies of operation by sharing data and information with other communities over the Comcast cable systems.

Additionally, homeland security is still of paramount importance. If the City could deploy cameras at critical sites which, in turn, could transmit information over the cable system or over an I-Net, overall security in the community could be enhanced.

Communities throughout the country have done or are doing vulnerability assessments for homeland security purposes. The ability of the City to quickly respond in the event of bioterrorism or natural disasters cannot be overestimated. It is important for the City to explore every feasible alternative (be it a wireless or wireline solution) to bolster its communications network capabilities. In the event of an emergency, information must be disseminated quickly and accurately to the public at large.

The cable system and fiber network in the City could also be used to further economic development. It will be important to stimulate citizen involvement through a broad-based community programming effort. Cities compete with other cities for businesses and market share. Both businesses and citizens place a high degree of emphasis on the availability of adequate communications infrastructure to meet their needs. If the City is to remain competitive, the communications network and infrastructure will need to be responsive to the sophisticated needs of local businesses.

Summary

In summary, given the aforementioned needs and interests, the City is keenly interested in expansion of the cable system and PRPA's fiber optic network which could provide more connectivity among key City locations for enhanced video, voice and data purposes. The fiber optic network could create efficiencies for City government and possibly save on current expenditures which are being made for leased lines. Connectivity among jurisdictions could provide for external sharing of critical public safety information. Given the homeland security challenges still faced by municipalities, the importance of such regional interconnection cannot be overstated.

COMMUNITY-AT-LARGE TOWN HALL MEETING

A Town Hall Meeting was held the evening of Wednesday, October 2, 2013. Several members of the public were in attendance. They included proponents of Public Access Programming, energy conservation, those that wanted a more Basic package with fewer channels for less money and other interested persons.

The Meeting was recorded on the City Channel 14. Viewers were informed that starting October 28, 2013, written comments could be provided online at www.fcgov.com.

The Meeting was moderated by Tom Duchen, President, and Bob Duchen, Vice President of River Oaks Communications Corporation. They presented an overview of the Cable Franchise Renewal Process, the Cable Communications Policy Act of 1984, the Cable Television Consumer Protection and Competition Act of 1992 and the Telecommunications Act of 1996. During the course of their presentation, they differentiated between Cable Service, Telephony and Internet Broadband Service. Since this is a Cable Television Franchise, Telephony and Internet need to be handled as separate matters. However, as per the discussion with the City, they did receive comments from those who wanted to talk about Internet Service from Comcast.

At the Town Hall Meeting, there were 30 to 40 people in attendance. Attendees included Andres Galvador, Carson Hamlin and David Young from the City; Jon Lehman, Director of Government Affairs at Comcast for Northern Colorado; and John McCormick, attorney for CenturyLink.

The comments of the attendees are summarized below.

The first speaker would like to see residents obtain the most channels for the least price. He would like to see the channels used to promote Public Health, Safety and Emergency Notification. He wants to see a low cost Basic service channel advertised. He felt that Larimer County had not done an adequate job in giving the public ample opportunity for input. At the latter part of the Town Hall Meeting, he indicated that this was the best example he had seen of gathering input from the public regarding a Cable Operator.

Jon Lehman with Comcast indicated that Federal law and the FCC constrain what a local government can do in terms of requiring a Basic Tier of service. His position is that there is effective competition in Fort Collins, and thus, there can be no rate regulation. He does think Comcast provides about 20 channels for \$20+ per month.

The next speaker wants to include Energy Efficiency in the Franchise. He believes that the current cable boxes waste energy in both the on and off modes and he dislikes the pricing by Comcast. In

his words, he “dumped Comcast,” as he estimated that 6% of the energy used in his home was from the cable boxes. He is an electrical engineer and wants Comcast to perform at Level 4 for the boxes. He wants Fort Collins to be an Energy Efficient City. Given the voluntary agreement to which many of the large, multiple system operators are parties, in these cases, 90% of the set top boxes need to meet Level 3 Energy Levels. He would like the City to be a “Demonstration City.” During his presentation, an update was provided that Comcast’s Basic Package costs about \$24.39 per month.

A resident of Fort Collins then said that she had Basic Service, but did not want programming for religious stations, Spanish stations or sports stations. She would prefer a la carte opportunities. Jon Lehman countered by saying that by not doing a la carte, people have the opportunity to see new channels in packages that would not otherwise be viewed. He indicated that per the FCC, channels are now being encrypted by Comcast in order to protect the “security of the system.”

Another resident would like to see a Basic Package for \$15 to \$16 per month. She would also like to receive the Public, Educational and Governmental Channels. By providing such an offering, she thinks Comcast could garner and develop a new market of viewership.

The person who is in charge of FCPAN (“Fort Collins Public Access Network”) wants the City to be sure to retain the existing Public Access Channel on Channel 97. This Channel provides a forum for citizens to be trained, producers to develop their skills, teens to have a forum for their voice, and an important way to communicate by non-profits that would otherwise not be able to afford to have their message carried. She also provided written comments from others regarding the value of the Public Access Channel. She does not want people to have to access a “Drop Down Menu” to access FCPAN. One of the moderators then indicated that it is very important that the PEG Channels remain on the Basic Tier. This provides easier access for viewership, and we do not want subscribers to have to pay to receive PEG Channels. This has been a major issue in another City where Comcast wanted the flexibility to move channels to digital tiers if effective competition existed in the city.

The next speaker does not receive cable television from Comcast because “she does not want to pay for commercials.” She asked how the City plans to reach people in an emergency if they do not have cable television. This is a difficult question. Some people can be reached via reverse 911 on their phones, others may see a crawl on broadcast stations and other people may see something on their computer with streaming video. It was indicated that this issue will be discussed with the Emergency Management Department in Fort Collins. This speaker also complained about the price of internet from Comcast which she said was about \$70 per month.

A film maker and an FCPAN Board Member then presented his input. He would like to see PEG funds used to provide operational dollars. The funding from the City helps for equipment, but there are positions that need to be funded. He does not want the Cable Franchise Fee money to go to the General Fund and as a Director he would like the funding level raised for Public Access and Educational Channels. He would also like the City to display a one month schedule for FCPAN and not just a one day schedule since FC PAN is behind the firewall. This organization needs money to get out from behind the firewall and does not have the necessary equipment to do so. The moderator then explained how, under Federal law, PEG Fees must be used for equipment and capital purposes. If they are used for operations, Comcast could seek an offset against future Franchise Fees or seek reimbursement. The Director does not want to have FCPAN continue to have to operate at “cut rates” and with the budgetary limitations. The speakers from FCPAN appreciate what the City is doing, but need more money to fund positions. He was complimentary to Carson Hamlin and the job he does at the City.

The next speaker had complaints about Comcast Customer Service. She said that there were charges on her bills and errors and that she had discussed them with Comcast multiple times. She was frustrated because Comcast kept coming back to the same place in the discussion and she was concerned about a collection agency contacting her. Even though they have paid Comcast, she said that she had to spend hours trying to get this worked out and Comcast disputes that she has

paid. She wants more accountability from Comcast and wants competition. She said “Comcast doesn’t listen.” The moderator suggested that she provide her name and address to Jon Lehman.

Another Board Member from FCPAN then provided input. The moderator, in response to her question, indicated why PEG Channels are part of a Franchise and that the City is not able to collect a Franchise Fee on Internet revenues. She said her understanding is that PEG Channels are given in return for Comcast being able to use the airwaves and serve the public interest. She would like to see a lower end Basic Tier Package with 10 to 15 channels for Public Safety and the Arts in order to carry their programming. She believes there is an untapped market for Comcast with such a Basic Package.

The next presenter was supportive of Public Access. He was concerned that when the Public Access Channel went from Channel 92 to Channel 97, it became very difficult for viewers to scroll through a lot of dark channels in order to find the Public Access Channel when people are on the Basic Tier. He said that viewers get lost and it impairs the support that can be obtained for Channel 97. He indicated that in its place on Channel 22 there is now a Spanish speaking channel which is not local. From his viewpoint, FCPAN provides a forum for people to get trained as producers and get their message out. He encouraged dissemination of the abilities of FCPAN from a public awareness standpoint so the non-profits could convey their information and not have to pay thousands of dollars to a commercial producer. One of the moderators indicated that if a channel is moved, it is important that the Cable Company pay for rebranding. Evidently, Comcast did some of this when the Channel was moved. The speaker believes that positioning the channel on Channel 97, rather than on a lower Channel position, is a huge obstacle to viewers.

He then indicated, while the internet provided by Comcast is good, that it is his view that Comcast was engaged in a “fraud or scam” regarding the provision of technical support for internet service. He alleged that when people have problems with their internet, Comcast then provides them with an 800 number and technical support who is not a third party, but rather connected with Comcast. That person then tells the customer that there is a virus and either “you need to buy this product

or you will die.” Jon Lehman from Comcast responded by saying he will check into this and “he hopes Comcast is not doing this because this is horrible.”

The next person is a volunteer with FCPAN. She would like to see funding provided for an employee or intern. She was also interested in providing opportunities for non-profits to air their public service announcements and messages.

The next speaker was a video production teacher. He is interested in the future of Educational Programming which can further democratic principles and civic pride. He believes that an informed population is an asset to the City. He differentiated people that use U-Tube which could be anyone with equipment or a web cam and contrasted this with the type of programming which can be shown by FCPAN. He believes that the equipment currently used is outdated and wants to have students possess the opportunity to use their video film production experience to further their career paths. He would like to see the partnership with Comcast strengthened. Jon Lehman said he would like to talk with this person and have discussions outside of the Franchise to see where there are opportunities to partner. One example is the Internet Essentials Program at Comcast which provides those families with students on free or reduced lunch the ability to receive internet service at 5 megabit speed for \$10.00 per month. During a Focus Group on the same day, United Way also espoused that this would be a great program for many of its members.

The next speaker was a City Employee. She indicated how the Living Histories Event supports the Fort Collins Senior Centers and Senior Resources. Because she does not have Comcast, she cannot watch the “Cemetery Stroll” which supports these entities. She would also like to see Comcast provide a \$15 per month Basic Package. She was also very complimentary of FCPAN.

The next speaker was hoping for something “more expansive and better” in the new Comcast Franchise. She supports FCPAN, but “gave up on Comcast.” She is glad that City Council Meetings are streamed and would also like to see FCPAN Programming streamed to her computer. Carson

Hamlin indicated that City Meetings are streamed live and on a video-on-demand basis. However, FCPAN currently does not have the equipment to stream its programming.

In response to a question, Andres shared that the Franchise Renewal Process is a two year process. The Community Outreach efforts would be continuing in the fourth Quarter of 2013. In the first Quarter of 2014, negotiations will commence with Comcast and are projected to last for one year. The Renewal Process is to be completed by March, 2015. One of the moderators indicated that the information gathered from the citizens will go into a Needs Ascertainment Report and will be used during the negotiations. He suggested that while the renewal process is ongoing, the City sit down with Jon Lehman to implement suggestions from those attendees in order to get traction.

A person then asked what percentage of Fort Collins residents receive cable service. Jon Lehman indicated that there were 31,000 cable subscribers, but he was not sure what the percentage was. This person is also interested in festivals and the arts and youth and the City promoting these to the residents.

A question was then raised as to what is the viewership number of FCPAN. Jon Lehman does not think that there are statistics on this. This person wants to know the number because it impacts grant and support levels.

A comment was then made that there should be more of the “share of the pie” for FCPAN for its operating budget. The Board of Directors of FCPAN has had to do much of the work for many years. This person would like to see Fort Collins, which in their view is equal to culture to culture which is found in larger cities, to have commensurate operating funds. The moderator shared that the 5% of Gross Revenues can be used by the City for any purposes, but the \$0.50 per sub per month PEG Fees need to be used for equipment and capital purposes given the interpretations of Federal Law. Thus, it is a policy decision for the City Council to determine where the 5% of Gross Revenues will be distributed. It was suggested that FCPAN address this issue with the City so that decisions can be made in this regard.

ADDITIONAL RESPONSES FROM ONLINE SURVEY

In addition to the work detailed above, follow-up On-Line Surveys were made available to Businesses and Non-Profits. The following is a summation of these six Survey Responses.

It appears that several of those responding are more interested in Internet Service than Cable Service. Several of the respondents do not or may not subscribe to Comcast. Several of the questions were skipped and many answers were not provided. Approximately one-third of these respondents watch the PEG Channels. One-half of those responding rated the City Government Channel (Channel 14) as somewhat valuable; the response was similar with respect to FCPAN, Channel 10-Poudre School District, and Channel 11-CSU.

There was interest expressed in having on demand PEG programming as well as utilizing FCPAN's resources.

Regarding these respondents with respect to Internet Service, Internet Service and connections are provided to some of the respondents with a Dial-up Line-56 Kbps or Less, and DSL. One-half of these six respondents are very dissatisfied with the cost of Internet Service. About 50% are satisfied or very satisfied with the speed of on-line connections; about 83% are satisfied or very satisfied with the billing practices of their provider; about 67% viewed the access to the Internet as reliable; approximately 50% were satisfied or very satisfied with training and technical support; about 67% are satisfied or very satisfied with the knowledge and courteousness of customer service representatives and about 83% are satisfied or very satisfied with the ability and courteousness of installation technicians.

C: PUBLIC, EDUCATIONAL AND GOVERNMENTAL ACCESS TELEVISION NEEDS ASSESSMENT

Introduction and Methodology

CBG Communications, Inc. (CBG), as one of the Team Partners with Telecommunications Research Corporation (TRC) on the Fort Collins cable-related Needs Assessment Project, conducted a comprehensive cable-related Public, Educational and Governmental (PEG) Access Needs and Interests Assessment within the City of Fort Collins franchise area. Carson Hamlin, Media Integration Specialist for the City, provided support in this effort and conducted tours of the production facilities and review of production equipment inventories.

Key stakeholders in the Fort Collins community were contacted to provide input via questionnaires, focused discussions, in-person interviews, and onsite reviews of facilities and equipment. Those who were contacted included a random sample of City residents, City government representatives, representatives from the Poudre School District (PSD), Colorado State University (CSU), Aims Community College, the Fort Collins Public Access Network (FCPAN), and the general public through public meetings that were held in the Fall of 2013. Specific findings regarding the needs and interests of the residential community and the general public are contained in other Sections of the TRC Needs Assessment Report. The findings regarding the other Communities of Interest are reflected in this Section.

The project included a request for, and review of, PEG Access documentation from the Access Channel providers referenced above. These included:

- Annual Access production statistics.
- Website usage statistics.
- Existing technology plans.
- Facilities layout.
- Master control signal flow diagrams.
- Access programming signal origination transport information
- Equipment inventories.

- Operating rules and procedures.
- Operating and capital budgets.
- Staffing levels.
- Channel programming schedule.
- Programming samples.

Along with analysis of this information, facilities tours, focused discussions, interviews and questionnaires were conducted.

Specifically regarding Governmental Access, CBG toured the production areas at City Hall. Along with the review and analysis of the City's Media Integration Specialist, facilities and equipment were reviewed and current and future needs were noted. Additionally, a focused discussion was held with City representatives on their perspective on current City programming and needs for the future. Further, a questionnaire was conducted of City stakeholders involved in program content development, production and distribution. Both the focused discussion and the Questionnaire included a focus on facilities, equipment, public meeting programming and content covering City agencies, programs and initiatives.

Regarding K-12 Educational Access, CBG toured the production facilities at the Poudre School District offices, and held a discussion with PSD representatives. Carson Hamlin also toured the facilities and reviewed equipment inventories that led to the development of facilities and equipment projections to meet current and future K-12 Educational Access needs. Additionally, a specific "hands-on" Questionnaire regarding facilities and equipment was conducted for staff, faculty and student representatives throughout the District, and questions concerning PSD programming and content development were part of a broad-based Educational Access stakeholders Questionnaire which also focused on higher educational programming and content. In each case, group participants and Questionnaire respondents were asked to focus on current Educational Access-related programming as well as the future needs they envision.

Regarding Higher Educational Access, CBG met with CSU representatives and held a focused discussion on current and future facilities, equipment and program development needs. Carson

Hamlin also reviewed CSU's Educational Access-related facilities and equipment. As noted above, a Questionnaire was also conducted that focused on current and future needs related to CSU facilities, equipment and program development from a CSU student, staff and faculty perspective.

Concerning Public Access, CBG held a focused discussion with FCPAN Board Members, volunteers and independent producers where a variety of facility, equipment, programming and other content development needs were discussed. CBG also reviewed the outcome of discussions held during public meetings, as well as responses to questions concerning Public Access in the residential community cable-related needs Questionnaire. Additionally, a Questionnaire was specifically targeted at the current and future facilities, equipment and programming development needs and interests of the FCPAN producer community which provided additional information for our review. Further, Carson Hamlin toured the FCPAN facilities, noting the current condition of facilities and equipment and the future needs to meet the needs assessed through the CBG study, as well as reviewing current equipment inventories. Similar to the above, this enabled Mr. Hamlin to project equipment which would meet the current and future needs throughout the projected life of any renewed franchise.

As indicated above, analysis of the PEG Access-related findings concerning the various governmental, educational and public/community interest groups were all factored into development of facility, equipment, capacity and associated funding projections to meet the needs assessed. These are reflected in the Conclusions and Recommendations found at the end of this Section and enable the development of appropriate phasings and priorities for equipment and facility upgrades over a projected 10 year timeframe, with replacements of equipment projected initially forecast later in the timeframe.

Overall, our review and analysis of the Questionnaires, meetings, focused discussions, interviews, onsite facilities review and web-based and written materials resulted in the findings and recommendations concerning necessary support for PEG Access going forward that are detailed below.

Findings

Overview of Fort Collins Public Access Network Channel 97

The Fort Collins Public Access Network (FCPAN) is a 501 c3 non-profit organization that operates Public/Community Access in Fort Collins from its facility on West Mountain Avenue in downtown Fort Collins. FCPAN programs Channel 97 and provides a wide variety of programming, from a variety of independent producers and organizations including public affairs programming, spiritual and religious programming, music and concert programming, sports programming, shows on science and technology, political interviews, shows on health and wellness, entertainment programming and many other topics. Programs vary in length from just over a minute to an hour and a half, with many conforming to traditional television windows of 30 minutes and one hour.

FCPAN indicates that its mission is to “operate in the public interest by encouraging participation in civic life as well as fostering artistic and cultural expression.” FCPAN indicates that it is dedicated to supporting individuals and facilitating “better communication between non-profit organizations and the community they serve.” Overall, they are “dedicated to promoting and strengthening Public Access television in Fort Collins.”

As part of this mission, they provide training on the use of cameras, lights, microphones and editing equipment. Playback operations are currently coordinated through the City. FCPAN is also working with the City to develop studio operations at the repurposed Carnegie Building in Library Park on Matthew Street.

Currently FCPAN is run by a nine member, all volunteer Board of Directors. They are planning to hire an Executive Director and Programming Director within the next two years, and are continuing to work on development of sustainable funding sources for those positions.

Focused Discussion with FCPAN Board Members and Program Producers

In October 2013, CBG held a focused discussion with FCPAN Board Members, independent producers and other Public Access representatives. The focused discussion participants were queried about a variety of different cable-related topics, including their perspective on the value of Public/Community Access, their experiences with Public Access facilities and equipment, and the facility, equipment and operational enhancements they project for FCPAN Channel 97 in order to meet their needs and interests in the future. Key findings from the group included:

- **FCPAN is extremely valuable to the community in that it provides both an outlet for community speech as well as a reflection of what is occurring in the community --** Group participants indicated that a lot goes on in Fort Collins, and FCPAN serves an important role by covering activities, especially art and cultural activities, that occur in the community and thus provide coverage of these activities to a wider audience than just those that attend. FCPAN is a source for education and learning on a wide variety of topics. They are a noncommercial public forum; in essence, an open media space. Because they provide education, mentorship and equipment to the community related to the production of video programming, they enable the community to report on itself. Also, because a television channel like FCPAN Channel 97 has significant outreach power, and because FCPAN teaches production values and video fundamentals that allow video producers to provide content that's important to them and the community, they serve a valuable purpose as a public forum, where no similar alternatives exist. In other words, FCPAN is the one channel that both covers and empowers the community.
- **FCPAN provides a valuable service to non-profit organizations --** Group participants indicated that FCPAN has received letters from non-profits that say that FCPAN helps them with mission-specific activities. These letters and other responses indicate that the equipment and production values education is very beneficial to these

organizations' outreach efforts. In addition, FCPAN continues to collaborate with associations to have even broader reach in the nonprofit community. Also, since FCPAN works with school-age children, they receive expressions of appreciation from parents. All this furthers the evidence that FCPAN is valuable to the Fort Collins community.

- **FCPAN has substantial viewership--** Participants indicated that they receive positive comments and thank yous related to FCPAN programming via responses to their newsletter, postings on Facebook, e-mails that are received and cards and letters that come in through the regular mail. They especially see positive response to programs provided in the evening and programs that are highly creative. Also, they receive many calls when their signal is turned off (as a result of various technical issues that have occurred over time), so participants noted that they know that Channel 97 is being watched. Additionally, evidence in both the written residential survey and the online questionnaire indicates that Channel 97 has viewership commensurate with other niche channels on the cable system.
- **Current facilities, equipment and operations have been useful and have some beneficial attributes, but significant enhancements are needed --** Group participants noted that the current cameras, both analog and digital (including standard definition [SD] and high definition [HD]), provide useful capabilities to the independent producers taking them out or using them at the facility. Microphones and current audio mixers provide reasonably good audio.

Regarding operations, the training/mentoring of expert volunteers has been helpful to those that use FCPAN. Also, the turnaround to air means that the timeliness of material being covered is able to flow through to FCPAN's viewers. Additionally, editing and post-production training is good.

However, many enhancements are needed to FCPAN going forward in order for it to both maintain and continue to expand its services in order to more fully meet its mission. Specifically, these include:

- *A Studio* -- There is no studio at this time, so this fact severely limits the types of productions that can be done and that viewers are used to. There is a focus on the development of a studio in the planned new facility, and this needs to be developed and fully equipped in the near term. This includes both robotics (because of staff and crew limitations), as well as a new fully functioning switcher.
- *Upgraded and Portable Editing* -- Current editing units need to be upgraded and portable units need to be implemented, including making such units secure so that they can be checked out.
- *Redundant Server* -- The playback server will need upgrades, additional capacity and also redundancy. The upgraded server should have the capability to provide live programming from the new studio directly to air.
- *Field Equipment* -- Field cameras and related equipment need to be upgraded more often, including to HD in the near future. Participants indicated that producers wanted to be taught on what the latest capabilities are in the market, so that they can take advantage of those capabilities, which means updating field equipment in a regular manner.
- *Archiving/Storage* -- Portable hard drives are being used now to archive and store program content. This needs to change to a centralized archiving/storage server for all to use.
- *Mobile Production* -- A more advanced mobile production system is needed, including multi-camera and the ability to stream video from music venues and community rooms around the City to generate more live programming. Also,

because of the consolidation of a certain diversity of the population in the north (where FCPAN is now) versus a lot of families and school children in the south (where significant PSD high schools and other facilities are located), mobile production should be able to bridge the gaps in production capabilities, perhaps even setting up a remote facility in the south.

- *New Facility* -- FCPAN is working with the City on a new facility, and that new facility needs to have specific and sufficient space for edit suites, field checkout, office functions, the studio and related video production and ancillary space. The new facility should also have a high speed internet connection which will enable video streaming to occur and the uploading of programming to be received.

Regarding operational enhancements, group participants indicated that the following are needed:

- *Sufficient Staff* -- Participants discussed at length the need for paid staff for FCPAN. Right now, with limited funding available, FCPAN is an all-volunteer operation. The organization needs at least an Executive Director and a Program Director in order to fully achieve its mission. Right now, while volunteer recruitment is ongoing, FCPAN has hit a plateau in what they're able to enable and facilitate regarding being able to assist independent producers in developing content and shaping it into a final product. Further, there is no funding for a live receptionist, which creates delays in getting back to people inquiring about FCPAN's programming and services.
- *Increased Visibility and Promotion* -- Participants indicated that they can't find programming information on the system, and because of its placement (at 97, where it used to be on 22), it is difficult to find without detailed program information. In addition, additional promotional efforts are need to "get the

word out” which includes promoting both the channel and individual programs. This will require more operational funding for marketing and outreach functions.

Such outreach will also allow FCPAN to further develop what they’ve already started which includes making more connections with teens and businesses, and expanding their role in events such as the current FCPAN presence at the Sustainable Living Fair.

- **FCPAN content needs to be delivered in high definition, as well as through other advanced forms of delivery** -- Group participants indicated that people expect HD programming and that all of the equipment is moving to HD. This means that FCPAN’s content should be displayed in HD, consistent with many current commercial channels and with other PEG channels as they migrate to HD. Producers are being trained in high definition and HD programming is up on FCPAN’s YouTube channel.

Beyond this, participants indicated that it’s very important to have Video on Demand (VOD) capacity in that it will enable heightening awareness of the diversity of FCPAN programming, making it easier to access, and appealing to youths and others that do a variety of their viewing in a time-shifted manner using the cable system’s VOD platform.

Additionally, participants indicated that iTV (interactive television) would provide even greater capabilities, and enable the organization to know who is engaged in the receipt of their content. It would, for example, allow enhanced fundraising activities and be beneficial to sponsors and underwriters.

- **Interconnections are needed between FCPAN and other current and potential programming development collaborators** -- FCPAN is very interested in interconnecting with other PEG entities as well as those that it currently collaborates with on programming. Having high capacity interconnections would allow the sharing and distribution of content, including content in a raw form that would then be developed into a final product through electronic collaboration. Participants indicated that this

would especially be useful between the northern and southern portions of Fort Collins. They also indicated that this may help form a media center concept, where PEG entities and other program developers could pool their resources in order to more efficiently develop programming and assist producers.

Public Access Program Providers/Producers/Users Questionnaire

The key findings from the Fort Collins Public Access Program Providers/Producers/Users Questionnaire are as follows:

Length of Affiliation -- Respondents to the questionnaire indicated a varying length of affiliation from one year to seven years with the FCPAN Channel 97 programming facility, with the most common given response of three years.

Average Hours Per Month of Involvement in FCPAN -- The range was from 0 for past producers to 80 for one respondent, with 10 and 20 being the most common response.

Nature of Affiliation -- The questionnaire response showed a good representation of independent producers/volunteers (half of respondents), non-profit representatives 25% and FCPAN Board Members 25%, along with a representative from the Poudre River Public Library District.

Overall Satisfaction Level -- A little more than a third of respondents indicated that they were satisfied with current facility operations, with 25% indicating Very Satisfied. A little less than one-third indicated Somewhat Satisfied, and one respondent indicated Not At All Satisfied. For those that were less than satisfied, responses indicated later in the questionnaire explained why they indicated lower satisfaction levels.

Interest and Involvement in Producing/Providing/Distributing Public Access Programming -- Respondents were significantly varied in the types of programming that they were involved in,

or interested in, producing, providing and distributing, indicating a diversity of interest in Public/Community Access television. For example, the largest response (62.5%) was regarding public outreach and community event programming. This was followed by a strong interest (50% of respondents) in public empowerment and community engagement programming and in training and education programming. Nearly half (43.8%) of respondents were also involved in the production of arts and entertainment programming. All remaining categories except for sports coverage were indicated by questionnaire respondents varying from community news and public affairs (25%) to religious faith-based programming (one respondent to the questionnaire).

Television Production, Media Training and Education -- The vast majority of respondents (87.5%) indicated that they had received television production, media training or education at FCPAN. This type of training varied from the use of video cameras and editing and lighting instruction to program planning methods and audio. Nearly all of those that received training indicated that it met their needs and expectations. For example, respondents indicated that “training was ongoing until I was comfortable to use their equipment correctly,” “it was thorough,” “it taught me how to use lighting effectively and safely,” and that they now had skills that they “did not have before.” One respondent indicated that it did not meet their needs and indicated that “the class on Final Cut was hurried and hard to follow.” Editing and post production were also the source of comments about additional type of training needed, including on Adobe Premier Pro and Adobe After Effects.

Assistance Received During Program Production -- Nearly all respondents indicated that the assistance they received during the actual production was Very Helpful (43.8%) or Helpful (37.5%). Specifically, respondents indicated that “the staff is very helpful when you request something,” they were provided with “the tools needed to create a good quality documentary,” and that FCPAN is “willing to come up with solutions and try to make the process easier.” One respondent again indicated that what they needed most was editing instruction and so the assistance was only “Somewhat Helpful.”

Use of FCPAN Production and Post-Production Equipment -- Both field and editing equipment were primarily used occasionally (56.3% and 43.8% respectively). The highest use was field equipment monthly (31.3%). One respondent used editing equipment weekly.

Ratings of FCPAN Equipment -- Both field and editing equipment were primarily rated Good (57.1% and 42.9% respectively), with the second highest number of respondents rating both Excellent (28.6% each). One respondent rated editing equipment Fair, and one respondent rated field equipment Poor. Reasons given for Fair and Poor ratings included that “camera equipment had some minor problems”; that it was important that technology, including editing software, be constantly changed and upgraded; “there is no control booth or studio”; and that some of the equipment is “not digital.” The quality of the recorded program aired over the cable system was listed as Good primarily (50%) with 25% listing it as Excellent and the remaining indicated No Opinion or that they Didn’t Know or it Was Not Applicable.

Use of Other Equipment and Facilities Besides That from FCPAN -- Nearly two-thirds of respondents indicated that they used equipment or facilities besides that available from FCPAN. The primary reasons were that they also “have some of my own equipment”; that they liked to “work from home”; that the hours of operation weren’t conducive to their own production schedule; and that there is no studio facility at FCPAN so they used a studio backdrop in the local library’s facilities for their monthly shoots.

Rating of FCPAN Services and Characteristics -- Most respondents rated a variety of FCPAN services and characteristics as Excellent or Good, with the highest being training (50% Excellent and 31.3% Good). This was followed by the Public Access production equipment (35.7% Excellent and 42.9% Good), the Public Access Board (35.7% Excellent and 28.6% Good), the Public Access facility location (26.7% Excellent and 46.7% Good) and playback scheduling (14.3% Excellent and 50% Good).

The Public Access facility location also had the highest Fair rating at 26.7%. The highest Poor rating was hours of operation at 37.5% Poor and 25% Fair. Public Access/program facility promotion also had a high Fair and Poor rating, with 15.4% respectively, for a combined Fair/Poor rating of 30.8%. Those that gave Fair and Poor ratings to various characteristics indicated that lack of staffing was an issue which significantly curtailed the hours of operation. It also provided a situation where volunteer staff was not available on a consistent basis. Also, because there is no studio, respondents indicated that this reduced the number of local independent shows and that the current facility location, being next to train tracks and being in an area where parking is difficult, created problems.

Beneficial Nature of a Studio and Studio Control Room -- Every respondent indicated that a studio and studio control room would be beneficial at FCPAN. Respondents indicated that it would be important to have “plenty of space for musical performances and show sets”; “a green screen for special effects”; “soundproofing”; “professional lighting”; room for a “small audience”; and “a dedicated high-speed internet connection.”

Beneficial Nature of Multi-Camera Remote Production Equipment -- Nearly half of respondents (46.7%) indicated that it would be beneficial if multi-camera remote production equipment was available at FCPAN. Fifty-three point three percent (53.3%) indicated that they didn’t know if this would be beneficial. For those that see a benefit, they indicated that it should be a “three camera operation with HD cameras and live streaming.” Also, it would be beneficial to have a mobile production truck or van. Respondents who see the benefit in such, also indicated how they would utilize the equipment, including doing different types of “video/audio production in virtually any location.” It would enhance the ability to produce shows on local interest topics, recording interviews with different artists on location as well as live performances and the ability to do multi-camera, independent programs.

Problems with Scheduling Necessary Facilities and Equipment -- Eighty-six point seven percent (86.7%) of respondents indicated that they had not experienced any problems in scheduling

necessary facilities and equipment for their productions. Of the two respondents that had, they indicated that the problems were due to coordinating people's schedules since they were all volunteers. Also, one respondent indicated that a new calendar system for reservations in advance had solved previous problems.

Additional Capabilities or Services That Need to Be Provided at FCPAN -- The majority of respondents indicated additional capabilities and services that need to be provided at FCPAN. Some of these included streaming and on-demand program delivery capability, possibly including interactive television; "keeping up with new technology"; HDTV; and the use of "any technologies that Comcast provides" because they "should be available to the Access stations."

Problems with Getting Programs Aired on Channel 97 -- Over three-quarters (78.6%) of respondents indicated that they had not had any problems getting their program aired on FCPAN Channel 97. Of those respondents who had, they indicated that, in the past, "it seemed to take much too long to get programs aired." Responses indicate that these problems appear to be resolved.

Awareness/Promotion of Local Public Access Programming -- Nearly all respondents (91.7%) indicated that current awareness/promotion of local Public Access programming is not adequate. Respondents indicated that "there needs to be more advertising about the shows or the availability of the public to create their own shows"; "notices in The Coloradan"; more done "to reach out to the community"; PSAs; money budgeted for promotion; "using more social media avenues"; and development of "a true social media strategy, working with other media and arts groups in town to help spread the word."

Diversity of Respondents -- Respondents' showed a diversity of geographical residence, employment status, education and age. Just over half of the sample was male (53.3%) with the remaining (46.7%) female.

Additional Comments -- Respondents were provided with a final opportunity to offer other comments or concerns regarding FCPAN and half of respondents did. Most comments were about “FCPAN staff being helpful and dedicated”; that “it’s an essential part of Fort Collins for community involvement”; and that its “potential as a community entity is virtually unlimited, if allocating enough money can exist and continue to exist.” Another respondent indicated that it was important to provide for an employee because a paid employee “would make it a much more operational place.”

Overview of the Poudre School District Channel 10

Poudre School District (PSD) operates Educational Access Channel 10. It indicates that its focus is to provide timely information to the community on education topics. It also provides video-related instructional support for PSD schools. In turn, video students have hands-on opportunities to learn digital storytelling and television production. The schools also generate programming for the Channel.

For the last 5 years, PSD Channel 10 has created 1,099 programs with an average length of 21 minutes and 55 seconds per program. This includes a diversity of programming, including shows focused on: arts and music; the schools in the Fort Collins/Larimer County community; education; language arts; health and wellness; PSD administration and leadership; programs focused on parents; science and math; social studies, history and current events; special populations; sports; student productions; technology; and training. This has varied from four shows focusing on special populations to 128 student productions. Additionally, 20 hours per month of programming is generated from coverage of School Board meetings and other events in the PSD Board Room.

PSD Channel 10’s facilities are well utilized, with the studio in significant use during the school year and continuing use in the summer. On average, annual usage is approximately 380 studio production hours. Post-production sees a significantly higher use, with an annual average of 2,400 hours or 200 hours per month for all editing stations combined. Playback and PSD

headend operations are continuous, with both direct and remote-in usage including programming, encoding, duplication and live stream capture and play out. Over the past five years, PSD has cablecast 107 live events throughout the District. PSD supports the Channel 10 operation with a paid staff, high school interns, administrative support, CSU students who earn academic credit for work at Channel 10 and the contributions of faculty, staff and students in the various schools. More information on all of the above is found in the focused group discussion and questionnaire results which follow.

Focused Discussion with PSD Channel 10 Representatives

In late October 2013, a focused discussion was held with PSD Channel 10 staff and other PSD personnel. The discussion topics focused on a variety of topics including: the use of cable television services for educational purposes; the use of Channel 10; current and future PSD Channel 10 facilities and equipment use, needs and interests; current and future needs regarding Channel 10 delivery methods; and the use of broadband services and Educational Access transport systems.

The key findings from the focused discussion are as follows:

- **PSD utilizes Comcast cable service, but changes in the service have created some problems** -- Focused discussion participants indicated that the PSD Schools in Fort Collins and the Administration Building all have cable service and have used it varyingly for both administrative and curriculum purposes. However, with the changeover to all digital channels, there have been some issues in getting service, channels and programming to the end user. As an example, they are provided four digital adapters per building, but previously, each classroom was able to receive the service, which the limited number of adapters will not allow. There are also some issues with the reliability of existing wiring.

Accordingly, it is currently used in a limited fashion, but the feedback from teachers and administrators is that they would like it back “the way it was,” which would be both more convenient and promote a higher degree of use for educational purposes.

One potential solution is to receive the service centrally, and then deliver it over the PSD network. This is done in other school district situations. There are issues that would need to be resolved, including the network capacity that would be needed and who would maintain the necessary equipment.

- **PSD Channel 10 is well utilized by the District to provide outreach to the Fort Collins community** -- PSD indicates that Channel 10 is “the most direct way of communicating the District’s message” to citizens and parents. Coverage of the Board meetings provides transparency. Many topics related to projects that are funded by taxpayers are covered to ensure that citizens are well informed. Through the programming provided over the Channel, Channel 10 “shares with the community what kids are doing at school.” Programs produced by PSD provide a direct pipeline to the District administration. The District well values the Channel and provides coverage on all of its initiatives.
- **PSD Channel 10 programming provides direct benefits to and shows involvement with the Fort Collins community** -- Programs on Channel 10 provide direct benefits to the community such as how-to shows where viewers learn about technology; arts and entertainment programming showcasing music events throughout the District; football games and other athletics which are a significant draw for the community; shows that have a focus on localism, such as local history shows and shows focusing on local science and scientists. A number of these shows are produced in partnership with local organizations such as the museum. It was indicated that the great thing about these shows is that they both reflect and provide education and information for the community and also work well for the classroom where students learn about a variety of subject matter, but from a local perspective.
- **Channel 10 is a valuable resource for students** -- Many students are involved in the development of content and production of programming for Channel 10. In fact, over a nine month period, 400-500 students from fourth grade on up annually participate either directly or indirectly in Channel 10 activities. Some of these occur at Channel 10,

but many occur out in the schools. This not only generates content for Channel 10, but provides a school-to-college and school-to-career path for many students. Additionally, young performers get a venue when their performances are covered by the Channel.

- **However, there is a significant disparity in television production funding for the various schools** -- Some schools such as Poudre High School have an active media lab and a studio where significant production work can be accomplished. Others have willing faculty and students but little equipment. These schools need significant equipment, especially field and editing capability. With that, PSD would see an increase in content production for the Channel.
- **PSD needs to upgrade all of its facilities to high definition** -- The next significant upgrade that PSD needs for Channel 10 is the move to high definition for equipment in the Board Room and its playback operation. Participants indicated that PSD is already shooting and archiving both studio and field productions in HD, but then have no way of playing them out and transporting them in HD. Additionally, once these upgrades are made, HD capacity is needed from Comcast in order to ensure that the finished product is provided with the best possible quality to subscribers.
- **Additional live production capability and transport is needed** -- Participants indicated that PSD Channel 10 has been able to accomplish a significant amount of live production, even considering the hurdles that it has faced. This includes not having adequate return feeds from some sites where it could otherwise easily generate live programming, including various facilities within the four comprehensive high schools (auditoriums, gymnasiums and, where available, the TV studio). The success of their live sports productions (this is their first year doing high school football) and the feedback from the Fort Collins community indicates that additional live productions will be well received.

This will require additional fiber return feeds from especially the four high schools to the Channel 10 playback server location. This should be pursued in the franchise renewal.

- **Besides high definition, other advanced forms of delivery are needed** -- Participants indicate a significant interest in having some of the programming, especially programs that are “evergreen” and/or timely and sought after, on the cable-based Video-on-Demand (VOD) system. There is also some interest in the use of interactive television (i.e., for distance learning as well as viewer feedback), but VOD capacity is the priority.
- **PSD wants to ultimately have equivalent broadband service for all of its schools** -- Right now, the District owns fiber that serves about 70% of its schools. It facilitates 1 gigabit connections in some cases, and the District is planning on moving its platform to a 10 gigabit backbone so that each school can have 1 gigabit in the future. The rural schools are a challenge and are served by commercial providers, including Baja Broadband, CenturyLink and Comcast. The District would like to expand fiber connectivity so that 100% of the schools are served and could each have at least a gigabit connection in the future.
- **Channel 10’s plans for the future** -- In the near term, participants indicated that PSD needs to continue providing the current types of valuable programming to the community and expand as its capabilities increase, as well as providing programming to citizens in a HD format.

In the longer term (the next 3 to 5 years), PSD will seek to increase the variety of programming; produce more live productions; increase student participation and involvement; increase its collaboration with community partners such as the public libraries; increase its school-to-college and school-to-career focus and continue to increase its already high value to the community.

Fort Collins K-12 Educational Access Program Producers/Providers/Users Questionnaire

The major results from the K-12 Educational Access Programmers/Producers/Providers/Users Questionnaire are as follows:

Facility Utilized -- The majority of Questionnaire respondents had experience utilizing the main PSD Channel 10 facility, but some had also utilized high school and elementary school facilities as well as the Board of Education Conference Room.

Nature of Affiliation -- The majority of respondents to the Questionnaire were faculty/teachers. Also responding to the Questionnaire were the full-time PSD Channel 10 employees, two representatives of the administration, three students, several college interns and two independent contractors. This represented a diverse respondent population that has familiarity with a variety of PSD production facilities.

Length of Affiliation -- Respondents experience with PSD facilities varied in length, ranging from 1 to 19 years.

Respondent Title -- Respondents had a wide range of job functions including media, technology and communications specialists; instructional technology; teachers; librarians; principals; video editors; video producers; the Channel 10 Video Production Coordinator and the Channel 10 Manager.

Interest and Involvement in Producing/Providing/Distributing Local K-12 Educational Access Programming -- Programming interest, involvement and production was very diverse and covered every category provided as well as others. The highest interest and involvement was in public outreach programming (63%), followed by community events and education and training (44.4%), arts and entertainment (37%) and community engagement (33.3%). All other types were between 20% and 30% interest and involvement. Additionally, some respondents specified other areas of involvement such as “daily news for our students” and “daily school announcements,” and one indicated that they were “always on the lookout for new and innovative programming.” Many specific examples of programming produced were given for each category, including documentaries; panel shows; a spelling bee; a video showcasing a Lego robotics tournament; kindergarten videos; community collaborations projects, such as the Polaris High Park Fire Restoration; a program on the use of technology for assessment; RMHS TV, a bi-weekly program of school news and events; band concerts; cooking competitions;

lectures; and many others. The staff of Channel 10 indicates that it creates over 220 original programs per year.

Overall Satisfaction Level -- Respondents were highly satisfied with the PSD Channel 10 main facility, including 66.7% Very Satisfied, 29.6% Satisfied and 3.7% indicating Not Applicable/No Opinion. There was less satisfaction with television/video facilities at schools. Here, half rated these facilities as Satisfied or Very Satisfied, but 18.2% indicated Somewhat Satisfied and 9.1% indicated Not At All Satisfied. Twenty-two point seven percent (22.7%) indicated Not Applicable/No Opinion.

Television Production and Media Education and Training for Students -- Students were asked whether they had received video or television production or other media education or training within the past year at Channel 10. Four indicated that they did, and all indicated that it met their needs and expectations. The type of training referenced included editing, working with live productions and news production. All four also indicated that it would be helpful to them in seeking or gaining employment or acceptance at a college or university of their choosing. One indicated that they “didn’t know anything about video production, now I plan on entering that field of business.” All also indicated that it was helpful to them in other ways. One respondent indicated that they “made connections, networking, learned about the industry.”

Assistance from PSD Channel 10 or School Staff or Students in the Use of Video Production Facilities -- For those who did not respond to the student training questions, many responded that they had received assistance from PSD Channel 10 or school staff or students. Most indicated that they had received assistance from PSD Channel 10, and 95% of those said that it was Very Helpful (5% said Helpful). About half of respondents indicated that they had received assistance from school staff, and 75% of those said it was Helpful or Very Helpful (16.7% also indicated Somewhat Helpful and 8.3% Not At All Helpful).

Additionally, about half also had received assistance from school students; with 75% again saying it was Very Helpful or Helpful (again 16.7% indicated Somewhat Helpful, 8.3% Not At All Helpful). When asked how this assistance was helpful or not helpful to them, most replied that

the assistance was helpful in a broad-based manner, including organizing, recording and editing their productions; support with production equipment and production values; and enabling students to produce shows on their own with assistance from the PSD staff. Overall, Channel 10 staff was cited as “professional,” “extremely knowledgeable” and that they “always provide extensive help.”

Use of PSD Channel 10 Main Facility -- For those that have used the PSD Channel 10 main facility, the majority used the TV studios and control rooms, with Occasional use at 50% of respondents. Thirty-two percent (32%) of respondents had also used the editing equipment Occasionally, and 22.2% had used field equipment Occasionally. The highest Weekly use was 24% of respondents for editing equipment, with TV studios and control rooms not far behind (23.1% Weekly). The highest Monthly use was field equipment (18.5%). As could be expected, continual Weekly use was noted by PSD Channel 10 staff, while other respondents indicated to the Monthly or Occasionally categories, and still other respondents never using those facilities, instead using video production facility/equipment at PSD schools.

Use of Video Production Facility/Equipment at PSD Schools -- For those that used production equipment at schools, the highest response was Weekly in every case, including: TV studios and control rooms (50% Weekly); editing equipment (45.8% Weekly); and field equipment (37.5% Weekly). The highest Occasional use was TV studios and control rooms at 12.5%, and the highest Monthly use was field equipment (8.3%). Similar to the PSD Channel 10 main facility, a significant portion of respondents answered Never or N/A if they had not used any video production facility/equipment in the PSD schools.

Respondents who had used school production facilities noted a wide range of specific equipment that they had used, including cameras, microphones, lights, control room and editing equipment and sound equipment, just to name a few.

Ratings of PSD Channel 10 Main Facility Equipment -- Respondents who had utilized the PSD Channel 10 main facility equipment were asked to rate its condition and utility. The highest Excellent rating was given to editing equipment (41.7%) which also garnered a 25% Good rating.

The next highest was TV studios and control rooms with 40% Excellent (this area also had the highest Good rating 48%). The third highest was field equipment at 30.8% Excellent (also 30.8% Good). The next highest good rating was for recorded program playback over the cable system at 32% Good (also 28% Excellent). No area of the facility was rated Poor, but 15.7% rated the School Board Room equipment as Fair. It also received the lowest Excellent rating at 4.2%.

For those that indicated the facility/equipment as Fair, they primarily indicated that Board Room equipment, cameras and lighting were in significant need of an upgrade. Also, they indicated that broadcasts needed to be in HD.

Ratings of Video Production Facility/Equipment at PSD Schools -- Those that utilized facilities at their school were asked to rate their condition and utility. The highest Excellent rating was for editing equipment (31.8%), followed by TV studios and control rooms at 19%. The highest Good rating was also TV studios and control rooms at 38.1%, followed by field equipment at 22.7%. Some Poor ratings (9.1%) were given to field equipment, and the highest Fair rating was given to TV studios and control rooms.

When asked to explain why they gave a Fair or Poor rating, respondents indicated that their control room was of very low quality, small and that the equipment was very old. Additionally, one respondent's school studio needed upgraded lighting, a better crafted chromakey set, wireless microphones, teleprompters and a properly built anchor desk. Others indicated that they have too few cameras and that the editing software was "not very user friendly."

Use of Their Own or Someone Else's Equipment or Facilities -- Respondents were asked if they use their own or someone else's equipment or facilities besides or instead of that available at PSD Channel 10 or their school. Three respondents indicated that they did and indicated the use of: microphones, headsets and a headset monitor splitter; their own personal DSLR camera so that they could get a certain style of video; their own microphones; and a hand crafted teleprompter system for Poudre High School.

Ratings of Various Operational Characteristics for the PSD Channel 10 Main Facility -- Respondents were asked to rate a variety of characteristics of the PSD Channel 10 main facility

including those related to staff, hours of operation, availability of equipment and facilities, assistance and other characteristics. Nearly every characteristic was rated by the majority of respondents as “Excellent,” ranging from the Channel 10 staff (96.2%, with one respondent indicating N/A) and assistance during actual production (72% Excellent) to hours of operation (42.3% Excellent, with 23.1% saying Don’t Know) and editing equipment availability (40% Excellent, with 36% saying Don’t Know). The highest Good rating was given to studio size/location (36%) and to the Channel 10 facilities overall (34.6% Good). No characteristic was rated as Poor, and only three characteristics were rated as Fair each by one respondent, including assistance with editing, portable field equipment availability and mobile production unit availability. Reasons were not given for the Fair or Poor ratings.

Ratings of the Characteristics of Facilities and Equipment at PSD Schools -- The majority of respondents indicated NA/No Opinion/Don’t Know/Don’t Use for the characteristics of school facilities and equipment. Of those that did rate these characteristics, the highest Excellent (38.1%) was given to assistance during actual production. The highest Good rating (23.8%) was given to education and/or training. Twenty-three point eight percent (23.8%) also rated this characteristic as Excellent. The highest Fair ratings (14.3%) were given to a variety of characteristics, including studio availability, assistance with editing, editing equipment availability and education and/or training. Poor ratings were given by 9.5% to portable field equipment availability and by one respondent to editing equipment availability.

When asked to explain their Fair or Poor rating, respondents indicated that they didn’t “have any portable field equipment,” that equipment was “not always available for use,” or at “inconvenient times,” that they need “a new laptop or PC to better handle editing,” “too few cameras” and there was too few staff to provide adequate assistance.

Problems in Accessing Necessary Facilities and Equipment -- The majority of respondents (88.5%) indicated that they had not encountered problems in accessing necessary facilities and equipment. For those who had, they indicated again that they “have too few cameras,” that they have “a very limited budget so many years, we can only purchase the essentials (batteries, tripods)” and that the schools “have not updated our studio in years.”

Additional Capabilities or Services Needed to be Provided at Channel 10 or PSD Schools --

About 40% of respondents indicated that there were additional capabilities or services needed at Channel 10 or at their school related to television/video production facilities. They noted a variety of specifics in this regard including: upgrades to allow broadcast in HD; upgrades of their Tricaster; cameras; connections to the four comprehensive high schools to provide live cable programming; additional funding for maintenance of upgrades, especially to editing and field equipment; a mobile production unit; upgrades of the Channel 10 playback server/headend; upgrades to the Board Room video equipment; new laptops or Macs and better editing software; and a larger studio with better acoustics.

Additional Comments -- Questionnaire respondents were asked if they had any additional comments they wanted to make, and about 20% did. Most often they talked about how valuable Channel 10 was and they would love to see its facilities and equipment improved.

Average Hours Per Month in Educational Access Television/Video Programming Production --

Respondents indicated a wide involvement in production of programming for PSD Channel 10 on a monthly basis from less than 1 to over 200 hours.

Overview of Colorado State University (CSU) TV 11

Colorado State University (CSU) operates and provides programming for its Higher Educational Access Channel, CSU - TV 11. Besides programming provided by the University, content is created by Campus TV (CTV) student productions, the Journalism and Technical Communications Department, the Communications and Creative Services team and Rocky Mountain Student Media. Other programming is imported from the Research Channel and Deutschwelle. Specific programs, for example, include news programs such as CTV News 11, Colorado Music Lounge, CSU educational programming, CSU athletics, documentaries, In Focus, other arts and entertainment programming and programming for and about the Fort Collins community.

Regarding CTV News 11, the CSU studio is used daily for producing the daily CTV news show. The length of the program varies, but it usually runs 15 minutes, and it's repeated on Channel 11 several times that day. That content is also re-purposed for Rocky Mountain Student Media's website <http://www.collegian.com>.

Beginning classes in television news also use the studio to produce multiple end-of-the-semester newscasts. Further, more programs are produced during the course of any given semester as compilations of student assignments. All these programs are put on Channel 11.

Additionally, in the last school year, Ram Productions developed 40+ music, theater, dance and sports programs that were produced live in the field for the Channel. Each program ran from 60 minutes to 2.5 hours in length. Ram Productions also has a Facebook page, and a Youtube channel.

CSU has a new academic minor in music, stage, and sports production. Enrollment is growing, and the students all are required to take both studio and remote production. This program is dramatically increasing the demand for studio, and television production in general at CSU. Since it's tied in with Music, Theater, and Dance, there is associated content being developed for the Channel.

Other programming includes documentaries, occasional talk shows, slide shows, and research-oriented programs produced by the Communications and Creative Services team that run on Channel 11 all year long. The documentary production class also produces 4 - 8 long form documentaries each year, with Channel 11 as the primary distribution.

The CSU Athletics program is also planning to produce a wide range of content from club sports to varsity sports using a portable production unit, which will be available for distribution on Channel 11.

Much of the above content is being developed in HD.

All these efforts result in a constant stream of original programming provided over the Channel, and this programming shows substantial viewership on the residential survey, as well as

through online distribution (1,561,423 views on the main YouTube channel and 147,946 Campus Television YouTube views in the past year).

Focused Discussion with CSU - TV 11 Representatives

In late October 2013, a focused discussion was held with representatives of CSU associated with program production and the operations of CSU - TV 11. Attendees included the General Manager of CTV, a CSU video producer, a CSU video engineer, a representative from Rocky Mountain Student Media, a representative from CSU External Relations and a CSU journalism professor associated with CTV News 11. Similar to the K-12 focused discussion, the discussion centered on the use of Comcast cable services for educational purposes, the mission and use of CSU - TV 11 and broadband services and institutional networks. The key findings from the discussion are as follows:

- **A Comcast return feed is needed to ensure satisfactory transmission over the Comcast system** -- CSU has its own campus television service that it provides to buildings and residence halls on the CSU campus. While it provides a feed from its cablecast headend to a Comcast headend, there is no subscriber system return feedback to CSU's Media Center in order to monitor the downstream provision of CSU - TV 11 to subscribers in Fort Collins. This needs to be installed by Comcast on the campus. Regarding the Access signal transportation from CSU to Comcast, it is currently RF modulator, coaxial cable-based and needs to be changed to digital optical transport. See the subsection on Infrastructure contained in the Facilities and Equipment Projections section, later in this Report.
- **CSU - TV 11 provides critical local news and information to the Fort Collins community** -- Focused discussion participants indicated that there is no local broadcast channel assigned to Fort Collins, so there is a "hole to fill" concerning timely television coverage of Fort Collins news and events. CSU - TV 11, through its television news operation, helps fill that hole.

Group participants also noted that CSU - TV 11 provides a valuable educational opportunity to CSU students concerning how television news works and that CTV News 11 is an important part of the journalism program. CSU gets positive feedback from viewers on its news coverage of the Fort Collins community as well as coverage of other community events and has found that this integral part of the Higher Educational Access Channel's programming helps make CSU journalism graduates to be best prepared for the workplace. They noted that many Channel 11 graduates now have jobs in the Denver television market.

- **CSU - TV 11 also provides coverage of campus and community events** -- Group participants talked about how CSU - TV 11 has significant local involvement in the City of Fort Collins, including a production unit that covers musical performances and produces local documentaries as well as providing coverage of campus events and athletics. They also discussed how student producers worked on videos for educational clients, and these provide valuable experience for the students as well as affordable productions for the educators and educational programming for the community.

CSU - TV 11 also provides live programs and produces coverage of approximately 45 events at the University Events Center each year.

- **CSU continues to upgrade its equipment, but more is needed** -- In the last three years, CSU has spent significant funding on production and associated equipment upgrades. Even with this, much more is needed, including:
 - Additional migration from standard definition to high definition, including a new playback server.
 - A new router,
 - Additional LED lighting,
 - A new character generator and more virtual set capability,

- Additional multi-camera flypack capability,
 - Upgrades to digital audio,
 - Use of a mobile production vehicle such as a sprinter van, and
 - Additional editing capability.
- **Detailed program descriptions are needed on the Comcast Electronic Program Guide/Menu** -- Group participants indicated that, while they get good recognition from the community, one thing that is critically needed are detailed program descriptions on Comcast's program guide/menu. They indicated that this would meet subscribers' "need to know" concerning the details of CSU - TV 11's programs and would help expand viewership.
 - **CSU is working on streaming its Higher Educational Access Channel live** -- CSU - TV 11 currently provides programs on-demand and is working on carrying the entire feed live. This will enhance CSU - TV 11's ability to be accessed across viewing platforms. It will also help with branding CSU - TV 11 as an always available and accessible community resource.
 - **CSU wants to continue expanding its provision of programming and its community partnerships** -- Approximately 200 events yearly are carried at the University Center for the Arts, including seminars, major speakers and other events. CSU wants to look at the potential for a permanent installation at this location in order to fully cover all these events.

Also, CSU is active with the Poudre School District and wants to continue pursuing more programming partnership opportunities with PSD.

CSU also wants to do more live programming which may require additional fiber connectivity. Further, CSU, because of the applicability of many programs to the region

(beyond the City of Fort Collins), needs to have certain CSU - TV 11 programming available through Comcast's video-on-demand system.

Fort Collins Higher Educational Access Program Producers/Providers/Users

Questionnaire

The key findings from the Questionnaire, focused on those with hands-on and associated experience with CSU - TV 11 as program producers/providers/users, are the following:

Nature of Affiliation -- The largest number of respondents were CSU employees, including employees affiliated with CSU - TV Channel 11, those in administration, the video production lead for external relations and a professor. The remainder of the respondents were students, including a journalism graduate student who was a teaching assistant.

Years Affiliated with Educational Access Television at CSU -- Some of the employees had long-standing affiliations with CSU - TV 11, including as long as 18, 25 and 28 years. Students, as could be expected, were affiliated a smaller amount of time with CSU - TV 11, averaging 2 to 3 years.

Respondent's Job Function -- Respondents showed a varying degree of functions related to CSU - TV 11, including video producers; instructors; assistants; Chief Production Manager; Promotions Manager; Equipment Manager; Director and Training and Personnel Manager; and similar functions, all showing a high degree of involvement with CSU - TV 11.

Overall Satisfaction Level with Current Television/Video Facility Operations -- Half of Questionnaire respondents indicated Somewhat Satisfied, while an additional 12.5% indicated Not At All Satisfied. Only one respondent was Very Satisfied, and 31.3% were Satisfied. The significant level of dissatisfaction (nearly two-thirds of respondents) is explained by responses later in the Questionnaire.

Interest and Involvement in Producing/Providing/Distributing Various Types of Local Higher Educational Programming -- Every type of programming listed in the Questionnaire was indicated by respondents concerning their interest and involvement. The highest was arts and entertainment at 93.8% of respondents. The next highest category was community events (75%) and then, at 62.5% each, community news and public affairs and sports coverage. Other interest levels ranged from 43.8% each for public outreach and community engagement programming to 12.5% for public meetings and civic engagement programs.

A variety of specific programs were listed by respondents, including: CTV News and other news oriented programming; sports programs such as Club Ram (about club sports); live event productions through the student-based RAM Productions, which focuses on music, theater, dance, sports and academic programs occurring at CSU; and shows concerning local points of interest in the Fort Collins community.

Video, Television Production and Other Media Education and Training -- Student respondents were asked what types of video or television production or other media education or training they had received at CSU - TV 11. The training they listed included CTV training, documentary video production, electronic field production, video editing, digital media training and other similar types of training. Eighty-five point seven percent (85.7%) of student respondents indicated that the education or training they received met their needs and expectations. For those whose needs and expectations have been met, they indicated that it had enabled them to get internships with a television production company; provided “great hands-on experience”; made them “well prepared for industry expectations” and helped them understand how the content they’re creating is being aired on television. One respondent indicated that the training had not met their needs and indicated that CTV training “does not feel productive or efficient” and that it “shouldn’t be a one size fits all ordeals.”

Nearly all of the student respondents indicated that the training they received would be helpful to them in seeking or gaining employment, indicating that the “experience I’m gaining has only helped me to further my skills and experience”; “it has set me far ahead of others”; and that

“the skills that I’ve learned in the studio will be applicable to what I want to do in my professional career.”

Use of CSU - TV 11 -- Respondents were asked to indicate their use of a variety of the facilities and equipment at CSU - TV 11. The highest amount of use was Weekly for every facility and equipment area tested. The highest Weekly was 93.3% for use of the editing equipment. The highest Monthly was recorded program playback over the cable system at 14.3%, with 42.9% Weekly, 21.4% Occasionally and 21.4% Never or N/A. The highest Occasionally was TV studios and control rooms at 35.7%, with an additional 64.3% Weekly. The mobile production equipment was the least used Weekly at 35.7%, but also had 21.4% Occasional use and then 42.8% Never or N/A.

Ratings of CSU - TV 11 Facilities and Equipment -- Respondents were asked to rate the condition of the facilities and equipment areas that they used. The highest Excellent rating was given to editing equipment at 46.7%, with an additional 40% Good and 13.3% Fair. The highest Good rating was live program over the cable system at 46.2%, with an additional 15.4% Fair, 15.4% Poor and 23.1% No Opinion/Don’t Know or N/A. The highest Fair marks were given to TV studios and control rooms at 42.9%, with an additional 21.4% Poor and 35.7% Good. The highest Poor rating was given to field equipment at 28.6%, with an additional 28.6% Fair, 28.6% Good and 7.1% Excellent. An additional 7.1% indicated No Opinion/Don’t Know regarding field equipment.

Respondents who gave Fair or Poor ratings were asked to indicate why. Many respondents indicated that these ratings were primarily based on equipment age and condition. For example, one respondent indicated that it was “essential that we get HD cameras in the studio,” indicating that all the studio cameras were SD now. Another respondent indicated that a lot “of our equipment is cheap/old/broken.” Others indicated that the “quality of the cable system facilities is weak.” Others indicated that “our cameras don’t work” and that the “TV control room is SD only, lacks a character generator and sufficient lighting control.”

Use of a Respondent's Own or Someone Else's Equipment -- Eighty percent (80%) of respondents indicated that they did not use their own or someone else's equipment or facilities besides or instead of that from CSU - TV 11. Twenty percent (20%) indicated that they did. These respondents indicated that their personal equipment was "more applicable towards the uses I need," that they use "some of my own programs on my laptop when creating graphics" and that "there are not enough cameras to go around CTV."

Rating of CSU - TV 11 Operational Characteristics -- Respondents were asked to rate a variety of the CSU - TV 11 facility's operational characteristics. The largest Excellent response was given to editing equipment availability, which also received 41.7% Good and 16.7% Fair. The largest Good rating was given to two characteristics, education and/or training and assistance during actual production at 58.3% Good. Each also had a 25% Excellent rating. The largest Fair rating was given to CSU - TV 11 facilities overall at 50% of respondents, with an additional 25% each rating the CSU - TV 11 facilities overall as Excellent or Good. The largest Poor rating was given to portable field equipment availability at 16.7%, with an additional 16.7% indicating Fair, 25% Good and 16.7% Excellent. In this category, 25% said that they had No Opinion/Don't Know or Don't Use.

When asked why they gave Fair or Poor ratings, respondents indicated that "equipment is first come, first served and there are always multiple people in need of it" and that the "playback server and scheduling software are both in dire need of upgrade."

Problems in Accessing Necessary Facilities and Equipment -- Seventy-two point seven percent (72.7%) indicated that they had not had any problems in accessing necessary facilities and equipment for their video production, with 27.3% indicating that they had. For those that had encountered problems, they indicated reasons such as "there are very few cameras"; "not enough resources to have regular access" and that they had encountered a "cramped studio, overlapping productions, etc."

Additional Capabilities or Services That Need to be Provided at the CSU - TV 11 Facilities -- Over half of respondents indicated that there were additional capabilities or services that need

to be provided at the CSU - TV 11 facilities. They indicated a variety of additional capabilities or services, including: HD equipment; live truck; live streaming capabilities; “fiber connects across campus”; “playback of signal on campus”; and that “any technological advance we can get would be fantastic.”

Other Comments -- Respondents were given an opportunity to indicate any other comments that they had, and nearly a third of respondents provided comments. These included comments such as the need for “more awareness campaigns;” additional educational and entertainment (student-produced) programs; and that “there needs to be more live programming of all types.”

Hours Per Month on Average Involved in CSU - TV 11 -- Respondents were also asked to estimate the hours per month on average that they are involved in the production of programming for CSU - TV 11. The responses ranged from a low of 3 to a high of “hundreds.”

Fort Collins Educational Access Stakeholders Needs Assessment Questionnaire

A Questionnaire was conducted for those that were stakeholders concerning program production and provision related to Educational Access, but were not typically hands-on users of related equipment and facilities, to get their perspective on Educational Access television in Fort Collins. Ninety-one (91) representatives of a variety of stakeholder organizations responded to the Questionnaire. The key findings are below:

Organization/Institution/School Represented by the Respondent -- Eighty-six point eight percent (86.8%) of respondents represented the Poudre School District and were concerned with K-12 Educational Access. Eight point eight percent (8.8%) represented Colorado State University and were concerned with Higher Educational Access. One respondent was from the Poudre River Public Library District, and three respondents were from non-profits and other organizations such as the Fort Collins Museum of Discovery.

PSD representatives came from throughout the School District, including high schools, middle schools, elementary schools, PSD Administration, the PSD Instructional Technology Center, the PSD Partnership and Volunteer Center and other PSD departments. CSU representatives were students, faculty, staff, volunteers and the Chair of the Department of Journalism and Technical Communication. The Poudre River Public Library District respondent was from the Harmony Library and serves as the Teen Services Librarian. The Fort Collins Museum of Discovery respondents included the Co-Executive Director as well as the Student and Teacher Programs Coordinator.

Organizational Needs and Interests Related to Educational Access -- Eighty-five point seven percent (85.7%) of respondents indicated that their partnership, collaboration, working relationship or other stakeholder involvement was related to PSD Channel 10. Three respondents indicated that their needs and interests were related to CSU - TV Channel 11, and 11% of respondents indicated that their needs and interests were related to both PSD Channel 10 and CSU - TV Channel 11.

The following series of questions were related to those stakeholders whose needs or interests were related to PSD Channel 10:

Viewership of Channel 10 -- Eighty-six point four percent (86.4%) of respondents indicated that they viewed the educational programming currently provided on PSD Channel 10.

Value of PSD Channel 10's Programming to Their Organization/Institution/School -- Respondents were asked to rate how valuable PSD Channel 10's programming was to their organization. Fifty-six point three percent (56.3%) of respondents indicated that it was Very Valuable, with an additional 32.5% indicating Valuable. Six point three percent (6.3%) indicated Somewhat Valuable, and one respondent indicated Not At All Valuable. Three respondents indicated that they Don't Know.

Respondents were asked to explain the level of value that they indicated, and stated a wide range of reasons. For example, they indicated that PSD Channel 10 allowed them to "stay in touch with important scholastic activities"; that "PSD is a critical educational partner"; it's a

“great way to provide information to all stakeholders”; “it helps to involve the community in school events”; it’s “able to bring classroom relevant material to kids and the community”; and it’s “essential information for me as a parent.”

Value of PSD Channel 10 to the Fort Collins Community At Large -- Forty-nine point four percent (49.4%) of respondents indicated that PSD Channel 10 is Very Valuable to the Fort Collins community at large. Another 34.6% indicated Valuable. Six point two percent (6.2%) indicated Somewhat Valuable and two respondents indicated Not At All Valuable, with 7.4% indicating Don’t Know.

Again, respondents were asked to explain why they indicated the level of value that they did. Most respondents indicated that its value was rooted in the fact that it’s an important communication tool to provide information between the School District and citizens. For example, comments were made such as it allows residents “to stay in touch with our School District”; “it’s the only place to easily get School District information”; it “helps the community learn about events going on and possibly involve them”; and “Channel 10 is very valuable to the community at large because it provides local content focused on one of the most important issues: education.”

Issues or Activities That Should Receive More Coverage on PSD Channel 10 -- The largest response to this question area was Don’t Know at 43%. An additional 29.1% said that there weren’t any issues or activities related to their organization, institution, school or the Fort Collins community at large that should receive more coverage on the Channel. Twenty-seven point eight percent (27.8%), however, did indicate that there were. A wide variety of issues or activities that should receive more coverage were listed, including: sports; performing arts; “student interest-based programming”; “more stories about what is actually happening in our classrooms so that parents and community members get a better picture of our schools”; and more on “school successes.” One respondent also indicated that “there are always new topics and ideas to cover.”

New, Additional or Different Types of Programming on PSD Channel 10 -- Fifty-six point two percent (56.2%) of respondents indicated that there weren't any new, additional or different types of programs that needed to be on PSD Channel 10. Forty-three point eight percent (43.8%) of respondents indicated that there were. New, additional or different types of programs specifically indicated included "information about different career options for graduates"; "Spanish information available for parents"; "more student directed programming"; and programming that keeps up "with the latest issues and trends." A number of respondents echoed themes similar to one respondent that indicated "it is always good to add new, relevant programs."

Current Awareness/Promotion of PSD Channel 10 -- Respondents were asked to indicate whether current awareness/promotion of PSD Channel 10 was adequate. Fifty-five point seven percent (55.7%) indicated No (the remaining 44.3% indicated Yes). Of those that indicated No, many described additional promotional methods and activities that would be beneficial, including use of "all media available to create impressions"; having teachers talk about Channel 10; "commercials on Colorado channels"; "more *Coloradoan* coverage"; on "bus benches"; "more links on individual school websites to particular Channel 10 links"; and use of a weekly e-mail list to parents. As one respondent indicated, "This is the biggest issue of all! More publicity is key and must be addressed."

Locations That PSD Channel 10 Can Originate Live Programming From -- Thirty-three point eight percent (33.8%) of respondents indicated that there needed to be more locations that PSD Channel 10 can originate live programming from. Twenty-one point three percent (21.3%) indicated that there were not, while 45% indicated that they Didn't Know.

For those that said Yes, they indicated "plenty of locations in numerous schools"; "Lincoln Center"; the Little Shop Open House; the Museum; and from the Library for "programs of interest such as author visits."

Partnership or Collaboration with PSD Channel 10 to Develop Video/Television Programming for Distribution on the Cable System -- Eighty-two point seven percent (82.7%) of respondents

indicated that they had partnered or collaborated with PSD Channel 10. Three respondents indicated that they had not, and 13.6% Did Not Know. Those that had were asked to explain the nature of the work, partnership or collaborative effort and what program development resulted. Many types of partnerships and collaborations were listed, ranging from working on sporting events such as basketball games to providing video updates related to construction bond projects; working on concerts and other performing arts programs; developing a second grade video series to teach students about the history of the Fort Collins area; producing “tech TV” shows to teach the community about handheld devices in the classroom and other uses of technology; producing the program “Walking Through the Water Year”; helping develop the PSD Board Candidate Forum; hosting documentaries; developing “career and community-related information involving students, teachers, businesses”; working on science programs; developing wellness education, cooking shows, staff and community training and safety topics on food and health; and doing “interviews about the 21st Century workforce and CTE curriculum.”

When asked if they planned more work, partnerships or collaborations with PSD Channel 10 in the future, 78.5% of respondents indicated Yes, two respondents indicated No and 18.5% indicated Don’t Know. Those that indicated a plan for more work, partnerships or collaborations described a variety of program development opportunities and plans including continuation of current efforts as well as new projects on new types of programming.

For those that had not partnered, collaborated or worked with PSD Channel 10 in the past, 64.3% of them indicated that they would like to in the future (with the remaining saying that they Didn’t Know). Of those that responded that they would like to work with, partner or collaborate, they envisioned such work, partnership or collaboration in the following ways: “showcasing television students’ work to the public”; “live broadcasting of numerous school events throughout the year”; “providing funding for new programs”; and “developing more educational opportunities for scholastic interest.”

Importance of PSD Channel 10 to the Fulfillment of Mission or Goals -- Respondents were asked to indicate how important Channel 10 was to the fulfillment of their

individual/organization/ institution/school mission or goals. Forty-two point seven percent (42.7%) of respondents said Very Important, an additional 30.7% said Important, 17.3% said Somewhat Important and one respondent said Not At All Important. Eight percent (8%) of those responding said Don't Know. For those that indicated a level of importance, they were asked to describe how PSD Channel 10 is important in helping their mission or goals. A variety of helpful aspects were indicated, including "it helps us do what we need to do to outreach to the community"; it "helps spread important ideas and messages to people who might not have known about it"; it "has allowed us to develop ideas and techniques for sharing science with people at all levels"; it helps "get our groups visible to families in the Fort Collins area that are considering attending our school"; and "it provides real-life media opportunities for students." The Library respondent also indicated, for example, "The Library District's Strategic Plan includes developing and maintaining partnerships in the community. This is one of our best partnerships."

The following questions were related to those stakeholders who indicated that they had a need or interest related to, or partnership, affiliation or collaboration with, CSU - TV Channel 11:

Viewership of CSU - TV Channel 11 -- Forty-seven point one percent (47.1%) of respondents indicated that they watch the Higher Educational programming currently provided on CSU - TV Channel 11. An additional 29.4% indicated that they did not, and 23.5% indicated that they Don't Know whether others at their organization watch CSU - TV Channel 11.

Value of the Local Higher Educational Programming on CSU - TV Channel 11 -- Twenty-five percent (25%) of respondents indicated that the local Higher Educational programming on CSU - TV Channel 11 was Very Valuable to their organization/institution/school. Another 25% said Valuable, and 12.5% each said Somewhat Valuable or Not At All Valuable. Twenty-five percent (25%) said that they Did Not Know.

When explaining the level of value that they indicated, respondents stated that “the programming is directly related to campus”; “it gives students opportunities to learn real world skills outside of the classroom”; and that it’s “critical educationally and in community building.”

Value of CSU - TV Channel 11 to the Fort Collins Community At Large -- Twenty-five percent (25%) indicated that CSU - TV Channel 11 was Very Valuable to the Fort Collins community at large. An additional 18.8% indicated Valuable, while 25% indicated Somewhat Valuable and 6.3% indicated Not At All Valuable. Here again, 25% indicated Don’t Know. When asked to explain why it was valuable to the Fort Collins community at large, respondents indicated that the Channel “provides awareness of community issues”; and “provides a connection from the University to the community. It allows students to showcase their work in the community;” and that “CTV is the only news show broadcasted in Fort Collins, therefore very important to the local community.”

Additional Issues or Activities That Should Receive More Coverage on CSU - TV Channel 11 -- Twenty-six point seven percent (26.7%) of respondents indicated that there were issues or activities related to them or their organization/institution/school or the Fort Collins community at large that should receive more coverage on Channel 11. Twenty-six point seven percent (26.7%) also indicated that there was not, and 46.7% indicated that they Did Not Know. For those that indicated Yes, they listed activities and issues such as coverage of “student life”; that it was “important to provide new content every week to engage viewers and keep them interested”; and that “more local programming is always better.”

New, Additional or Different Types of Programs on CSU - TV Channel 11 -- Sixty percent (60%) of respondents indicated that there were new, additional or different types of programs that need to be on CSU - TV Channel 11 (40% indicated that there were not). New, additional or different types of programs cited included: more interview programs; more news; “more student-centric programs”; a science show intended for an adult audience; ways “to involve the community more”; and a focus on “interactions between students and Fort Collins residents.”

Current Awareness/Promotion of CSU - TV Channel 11 -- Sixty percent (60%) of respondents indicated that CSU - TV Channel 11 programming promotion was not adequate (40% indicated that it was). When asked what additional promotional methods and activities would be beneficial, respondents indicated that “the University could help with other promotional activity on their platforms and video screens on campus”; “more promotion through advertisements”; and “Comcast could also provide promotional spots on the system.” One respondent indicated, “We need more exposure such as various TVs on campus that play our show and further involvement with the community, especially CSU students.”

More Locations for Originating Live Programming on CSU - TV Channel 11 -- Twenty-six point seven percent (26.7%) of respondents indicated that there needed to be more locations for live origination of programming. Twenty-six point seven percent (26.7%) indicated that there did not need to be, and 46.7% said that they Did Not Know. Of those that indicated that there needed to be more locations, they listed such locations as “all sports venues”; the UCA; the Lory Student Center; the Plaza at the LSC; and the Oval. One respondent indicated that “a lot of locations are available already, just need more resources and personnel to get there.”

Work With, Partnership or Collaboration with CSU - TV Channel 11 to Develop

Video/Television Programming for Distribution on the Cable System -- Respondents were asked whether their organization had worked with, partnered or collaborated with CSU - TV Channel 11 to develop video/television programming for distribution on the cable system. Twenty-two point two percent (22.2%) of respondents indicated that they had, with 38.9% indicating that they had not and 38.9% indicating that they Didn't Know. Of those that had worked with, partnered or collaborated with CSU - TV Channel 11, they indicated such work, partnerships or collaborative efforts as “student media produces nightly programs that are cast on Channel 11”; “CTV produces four to five shows a week every week of the semester”; and that “the Department of Journalism works closely with the Division of External Relations and Student Media in management and content development.”

All of those that currently work, partner or collaborate with CSU - TV Channel 11 on program development indicated that they would do so in the future, including both continuation and expansion of current efforts.

Of those who had not worked with, partnered or collaborated with CSU - TV Channel 11, 21.4% indicated that they would like to in the future (an additional 21.4% indicated No and 57.1% indicated that they Didn't Know). Of those who wanted to work with, partner or collaborate with CSU - TV Channel 11 in the future, they indicated that they would like to develop a program about "science in your life"; grow "awareness of how the Museum could partner with CSU and the student body"; and that they weren't sure at this time, but they wanted to "brainstorm possibilities."

Importance of CSU - TV Channel 11 to the Fulfillment of

Individual/Organizational/Institutional/School Mission or Goals -- Twenty-nine point four percent (29.4%) of respondents said that CSU - TV Channel 11 was Very Important to fulfillment of their mission or goals. An additional 5.9% said Important, 11.8% said Somewhat Important, 11.8% said Not At All Important and 41.2% weren't able to gauge the importance. Of those that expressed a level of importance, they indicated that CSU - TV Channel 11 was important in helping meet their mission or goals in the following ways: "it is critical to provide a voice for students, a venue to understand the University, an academic support mechanism, to motivate students, to provide creative outlet, to inform the local community, to support the arts, to increase awareness of opportunities in media across campus"; "it is mission critical to the student media video programs"; and that "without Channel 11, CTV would have no place to be broadcast."

The following questions were for all respondents to the Educational Access Stakeholders Questionnaire:

Organizational/Institutional/School Use of Comcast Cable Television Services -- Forty-one point three percent (41.3%) of respondents indicated that their organization/institution/school

currently has Comcast cable television services. An additional 17.5% of respondents said No, and 41.3% Did Not Know whether they had Comcast cable television services.

Of those that had cable television connections and knew how many they had, they listed from 1 or 2 to hundreds. When asked how many more connections they needed in the future, respondents noted an issue that was indicated as a problem for PSD. Specifically, one respondent indicated “having two makes it very hard to utilize across our building. Two connections does not adequately serve 50+ classrooms.” Another respondent similarly indicated “more direct connections to classrooms would be great.”

When asked if additional set-tops, units or other system hardware to make use of the current or future cable connections was needed, 14.8% of respondents said Yes, 18.5% said No, and 66.7% said that they weren’t sure or that they Don’t Know. Again, respondents noted the problem with only two connections per PSD building, indicating “teachers no longer have the ability to show TV programming that is integrated into their lessons unless no one else is doing so ... they have access to one of two connections.”

Cost of Cable TV Outlets and Cable Service -- Respondents were asked what their organization/institution/school pays each month for cable TV outlets and cable service. Most respondents did not know how much they paid (69.2%). One respondent indicated that they get free cable TV services, while 3.8% of respondents each indicated that they paid less than \$50 or \$50 to \$100 per month.

Organizational/Institutional/School Use of Cable Television Connections Now and In the Future -- Respondents were asked to discuss how they use their cable television connections. Of those that provided an answer, 70.8% indicated that they currently view PSD Channel 10, while 44.2% indicated future viewing of Channel 10 and 25% indicated that they were unsure whether they would be viewing PSD Channel 10 in the future. Regarding CSU - TV Channel 11, 28.6% of respondents currently use their connections for viewing CSU - TV Channel 11, an additional 9.5% indicated future use and 61.9% indicated that they were unsure. The largest other categories of current use included 69.6% for viewing news and informational

programming, 52.2% for viewing other educational programming and 45.5% for viewing public meetings. The largest future use was 13% for viewing other educational programming.

Ratings of Comcast Cable Services -- Respondents who used Comcast cable services now were asked to rate their Comcast cable services. The highest Good ratings were given to overall quality of service (58.3%), sound quality of service (54.2%) and picture quality of service (45.8%). The highest Excellent rating was given to variety of programming available at 16.7% (with an additional 25% Good). The highest Fair ratings at 25% each were also given to picture quality and sound quality of service. The highest Poor ratings were given to picture quality of service, cost of cable services and service/repair response at 8.3%. In many categories, the largest response was Don't Know.

For those that gave Fair or Poor ratings, they indicated reasons such as cable service was “a little expensive”; “sometimes the visual is scratchy”; “we continue to have random occurrences of poor picture quality”; and “the picture on Channel 11 can either be okay or very bad depending on the night.”

Categories of Programming Not Currently on the Cable System That Your Organization/Institution/School Would Like to See Added -- Two respondents answered this question and indicated “a wider variety of shows/content!” and “more student-made programming.”

For those that did not have cable television service now, they were asked how many connections they would need if they were to establish it in the future. Most respondents to this question indicated that they Didn't Know how many they would establish, while others indicated 2, 5 or “1-50 depending on programming.”

Channels or Categories of Programming an Organization/Institution/School Would Be Seeking When Establishing Cable Television Service -- Again, those that did not currently have cable television service were asked to indicate what categories of programming they would be seeking. Most indicated that they Didn't Know. Others primarily indicated “educational channels” but also indicated “news, live broadcasting”; “historical, local community, science”; and “a variety from sports to news.”

Importance of Access to Cable Television to an Organization/Institution/School's Mission and Goals -- When asked how important it was to have access to cable television, 31.1% of respondents said Very Important, 32.4% said Important and an additional 10.8% said Somewhat Important. Three respondents indicated Not At All Important, and 21.6% indicated Don't Know. Respondents indicated a variety of reasons why access to cable television was important, including "live events and other programming can be easily accessed"; "so we can see what is happening in PSD"; "current and local topics are the most critical and not provided elsewhere for group use"; "allows access to educational programming" and "it is important to have access to cable television because it provides a way to get a clear picture and sound without potential technical difficulties of internet-based solutions."

Other Comments -- Respondents were asked if they had any other comments about PSD Channel 10, CSU - TV Channel 11 or Comcast cable television service in Fort Collins. Approximately one-third of respondents indicated that they did, and the comments ranged from "PSD Channel 10 is vital to the operation of an outstanding District such as PSD!" and "we have received incredible support from them (Channel 10) on the 6-12 grade levels" to "CSU needs more financial support to make Channel 11 more functional."

Overview of the City of Fort Collins City Cable Channel 14

City Cable 14 is the City of Fort Collins Government Access Channel and has a focus on ensuring that citizens stay connected to their local government, City government is transparent to citizens and residents are aware of local issues. In this vein, City Cable 14 provides both City of Fort Collins and Larimer County government meeting coverage, coverage of political debates, discussion programs on local issues, information on protecting the environment, programs on City agencies and a variety of public service announcements. For example, recent City meeting coverage included the Fort Collins City Council and Planning and Zoning Board, and County meetings included the Larimer County Planning Commission, Larimer County Land Use meeting and County Commission meetings. Non-meeting programming on the Channel included health programming, environmental programming, projects concerning the Poudre River and imported programming such as NASA 360.

The Channel 14 staff includes three FTE and two hourly employees comprised of the Channel Manager and four Producers/Directors. The City Cable 14 staff does a large amount of production on a monthly basis, including 67 original programs per month which amounts to 47 hours per month of original programming. This breaks into 75% meeting coverage and 25% non-meeting coverage and 90% locally produced programming and 10% imported programming.

Regarding facility usage, the field equipment is in use 20 days per month, usually an average of a half day per day. The editing equipment is in continual use. The studio is utilized 10 days per month; again typically for half day productions. The Council Chambers and control rooms are in use 15 days per month; again constituting typically half day productions.

The City, under its existing Franchise, has another Government Channel that was formerly in reserve. It enables Aims Community College to utilize that Channel for Educational Access programming, since it's currently not being utilized by the City. Aims utilizes the Channel for a variety of programming similar to the types of programming that occurs on its flagship channel which is provided in the Greeley franchise area. Specifically, Aims runs its Board of Trustee meetings on Wednesday evenings and otherwise provides programming that is produced at the Community College, such as student iFocus workshops, music showcase programming, daily exercise/fitness programs and other types of programs related to Aims Community College.

As is discussed further herein, the City government will, in the future, want to return this capacity to a Government Access Channel. This could take the form of a channel specifically focusing on Larimer County government, while City Cable 14 continues to focus on City government, or could potentially be utilized to provide one channel that focuses on live and recorded meeting coverage and another channel that focuses on shows about government programs, services and initiatives.

Focused Discussion with Fort Collins Government Representatives

A focused discussion was held with Fort Collins Government representatives concerning City Cable 14 in late October 2013. Participants included the staff of City Cable 14, as well as other members of the administration who are involved in oversight, operation and strategic direction of the Channel. Group participants focused on a variety of City Cable 14-related topics, including facilities and equipment needs in both the staff area (studio production, field/remote production and editing and playback) as well as the Council Chambers and public meeting areas; forms of delivery including SD/HD, video on demand and emerging forms such as interactive television; facilities and equipment for production support including virtual sets and imaging and storage systems; transportation and distribution technologies; and other related current and future needs and interests. The key findings from the focused discussion are as follows:

- **The City wants to build on City Cable 14's high visibility and the types of programming that are most important to the City's residents** -- Participants indicated that Council meetings have high visibility and shows of local interest are seen as very important by residents. Accordingly, City Cable 14 needs to focus more on, and have more outlets for distribution of, the types of programming that are important to citizens. For example, staff wants to do more "when local matters" types of shows; work more in the field to focus on activities and events in the community and be visible in the community; provide a focus on more arts and cultural programming, especially when the City is involved in such events; do "a day in the life" programming to show citizens what happens behind the scenes at City government; and focus on content that is about the natural resources within the City, which are important to City residents (this includes, for example, ensuring that environmental gear is available for the cameras so that they can be used within all parts of the City's environment). Additionally, knowing that economic development is important, developing shows in concert with the Downtown Business Association would be beneficial. Participants noted that it will be important to

have the personnel, funding and other resources necessary to continue to focus on and expand these types of programming.

- **City Cable 14 needs to keep up with technology** -- Participants noted that while a number of upgrades have occurred recently, there were still many that need to be implemented, including upgrades such as:
 - HD master control/playback.
 - Upgrades and lighting for the studio.
 - Upgrades to the equipment in remote meeting locations such as the Community Room and Police Community Room.
 - The addition of a fully functional mobile production van. As forecast in the equipment projections spreadsheets, this would be a sprinter van-type of mobile production vehicle which could be shared with the other PEG Access organizations.
 - A new storage system which could be a tape-based system, an upgrade to the storage area network or potentially cloud-based storage.
 - Closed captioning, when it can be affected by a technological solution (rather than having high operational costs for in-person closed captioners).
- **Delivery of City Cable 14 needs to be consistent with other channels on the cable system and advance with technology** -- Participants noted that City Cable 14 was cablecast in SD now, but with current and upcoming upgrades would be fully HD. Participants also noted that 4K would be a reality, potentially in the near term. It will be very important, from both a production and a viewership perspective, to ensure that the channel migrates into HD in a soon timeframe and has the capability to move to 4K within a longer term timeframe. This means having both the ability to migrate production equipment over time, as well as have increased channel capacity on the

cable system. It was noted that as programming expands, City Cable 14 will want to utilize its second Government Access Channel (currently programmed by Aims Community College). It will be important to have that channel available, so that the City in the near term can begin providing programming on both channels.

This also means that the transport to Comcast will need to provide the quality and capacity needed for HD and subsequently 4K. Participants indicated that HD/SDI uncompressed transport would be the best in order to provide the highest quality to Comcast.

Additionally, it's important for certain types of Government Access programming to be available on-demand on the cable system. This includes: City Council meetings (to increase visibility and continue to enhance transparency); County Commission meetings; other shows of high importance, such as programs focusing on time-sensitive topics (to get the word out in as many forms of delivery as possible); and shows that are "evergreen" (so that viewers can access them at times that are convenient for them). This means that detailed menu/guide information on these on-demand programs also needs to be available to viewers.

- **New Government Access origination locations are needed** -- The City has certain capabilities now to go live from various facilities because of fiber that the City has implemented itself. The City needs additional fiber locations which would allow a substantial increase in live programming to be originated from the field. Such locations include the following:
 - The new museum.
 - All three City libraries.
 - The Poudre Fire Authority Administration.
 - The Platte River Power Authority Administration.

- Fairgrounds/Budweiser Events Center.
- The Carnegie Building (old library).
- Any newly built City building throughout a franchise renewal term.
- **Certain operational enhancements need to be pursued in the future** -- For example, City Cable 14 needs to continue to expand its branding efforts, including both on-channel and cross-channel promotion. Additionally, consistent with the focus on a shared van, it may be possible to look at some shared facilities/consolidation for high cost facilities that may be pursued in the future. For example, “drone” type cameras are being introduced into television production; potentially, initial units could be shared among PEG entities that would need them for overhead shots. It is notable that Fort Collins is currently the cablecasting center for FCPAN, City Cable 14 (which also provides County programming) and the second Government Channel, which is currently providing Aims Community College programming, indicating that the City has already found ways to promote efficient use of PEG resources.

Fort Collins Government Access Program Providers/Producers/Users Questionnaire

The key findings from the Government Access Online Questionnaire effort are as follows:

Nature of Affiliation -- A variety of those involved with City Cable 14 responded to the Questionnaire, including City employees (this was the largest number at over half of respondents including City Cable 14 employees), non-profit representatives, County employees and other organizational representatives, including the Poudre Fire Authority, the League of Women Voters and a federal government employee.

Length of Affiliation -- Affiliation with City Cable 14 showed long-standing involvement. The range was from less than one year to 30+ years, with many 10 years or more.

Overall Satisfaction with City Cable 14 -- Respondents were Very Satisfied (72.2%) or Satisfied (27.8%) with current City Cable 14 operations.

Nature of A Respondent's Interest and Involvement in Local Government Access Television --

The vast majority of respondents were involved in public outreach programming (88.2%) related to City Cable 14. The next highest category was community events (47.1%) and two types at 41.2%, community news and public affairs and public meetings and civic engagement. The only type listed that Questionnaire respondents were not involved in was sports coverage. A variety of specifics were provided by respondents concerning programs and content, including involvement in various public meetings; the show *Community Checkup*; Natural Areas Department programming; educational programs for lifelong learning; taping various events, including CityWorks; Thursday night concerts; parades; and other programs like *Access Fort Collins*.

Involvement in Training or Education Programs -- A little over half of respondents (55.6%) indicated their involvement in the production of training or education programs. Such programs included EMS medical and trauma education; education about natural areas; videos for Boards and Commissions; landlord and HOA training; and healthcare provider education.

All respondents that produce training and education programs indicated that it met their needs and expectations. When asked how it met their needs, respondents indicated that the resulting training and education programs were “professional product,” “makes us look good,” “program conveyed important current information and gave credit to my agency as an unbiased source of that information” and “it was an affordable product.”

Additional Types of Programs That Need to be Produced at City Cable 14 -- Twenty-two point two percent (22.2%) of those responding to the question indicated that there were additional types of programs needed. The additional programs indicated included “Fire Department Board Meetings” and programs that will “assist citizens to understand the cost and value of County government services.”

Assistance by City Cable 14 During the Production of Programs -- Respondents were asked whether the assistance they received at City Cable 14 was helpful. A vast majority of respondents indicated that it was Very Helpful (88.2%), with an additional 5.9% indicating Helpful and 5.9% indicating Not Applicable.

Respondents amplified their responses by saying that “the Cable 14 staff are talented professionals who handle all the technical details with knowledge and experience,” that staff members are “very prompt, professional and helpful,” that “Channel 14 has the video experts that can help us turn our ideas into good programming,” and similar comments.

Use of City Cable 14 Facilities and Equipment -- Respondents were asked whether they used the City Cable 14 facilities and equipment. A number of respondents did not have hands-on experience so indicated that they never use the equipment. The largest use was the production of a live program over the cable system (33.3% Monthly and 33.3% Occasionally), with the second largest category being the TV studio (21.4% Monthly and 42.9% Occasionally), field equipment (7.7% Monthly and 46.2% Occasionally), multi-camera remote production (10% Monthly and 50% Occasionally), Community Room production equipment (8.3% Monthly and 41.7% Occasionally) and Council Chambers production equipment (27.3% Monthly and 18.2% Occasionally).

Ratings of the City Cable 14 Facility and Equipment -- Respondents were asked to rate the City Cable 14 facility and equipment. The highest ratings were for playback equipment at 35.7% Excellent and 28.6% Good. (Here again, it should be noted that nearly half of respondents indicated No Opinion/Don’t Know or Not Applicable for most categories because they don’t have hands-on-use of the equipment.) The second highest category was live program over the cable system at 35.7% Excellent and 14.3% Good. This was followed by the TV studio at 26.7% Excellent and 26.7% Good. This part of the facility also got the one Fair rating (there were no Poor ratings). The respondent here indicated that the TV studio needs some investment. Field equipment also got a high Excellent rating (35.7%) and a 7.1% Good rating. The highest Good rating was the Community Room production equipment (33.3%), with an additional 20% indicating Excellent.

Characteristics of City Cable 14's Operation -- Respondents were asked to weigh in on a number of City Cable 14 operational characteristics and attributes. Again, respondents varied in their knowledge of attributes, and so some (such as editing equipment availability) had high No Opinion/Don't Know/Don't Use responses. Some, such as City Cable 14 facility staff, were rated by all respondents. In fact, the City Cable 14 staff received the highest Excellent rating (87.5%), with an additional 12.5% rating it as Good. After this, the highest ratings were received for assistance during the actual production (75% Excellent and 18.8% Good), followed by City Cable 14 facilities (56.3% Excellent and 25% Good). The highest Good rating (46.7%) went to City Cable 14 program/facilities promotion, with an additional 13.3% saying that this characteristic was Excellent. After this, the second highest Good rating was training and education program production at 37.5%, with another 37.5% indicating Excellent. Only one Poor response was given concerning the City Cable 14 office location, with an additional 13.3% indicating Fair. The next highest Fair ratings (12.5%) were given to studio location and the City Cable 14 facilities. Every other attribute was rated Excellent or Good.

Regarding the Fair/Poor ratings, the largest explanatory comments were related to the offices, indicating that they "seem dated and cramped," they are "not in a location conducive to collaboration with other communications staff" and that they are "located in the basement of City Hall with no windows or meeting space." One respondent also indicated that there is not enough staff for the demands asked of Cable 14.

Problems Encountered in Scheduling Necessary Staff, Facilities and Equipment -- Eighty-seven point five percent (87.5%) indicated that they had no problems in scheduling staff, facilities or equipment. Twelve point five percent (12.5%) indicated that they had problems. Their responses were focused on, again, both staff and equipment issues. Respondents indicated, for example, that "staff is way over-scheduled and busy" and that they need a headset microphone in the Community Room.

Additional Capabilities or Services Needed at City Cable 14 -- Twenty percent (20%) of respondents indicated that some additional capabilities and services need to be provided at the

City Cable 14 facility. Those indicated included high definition, more remote capabilities, a bigger studio and that Cable 14 is expected “to be up-to-date.”

New, Additional or Different Types of Programs on City Cable 14 -- Thirty-three point three percent (33.3%) of respondents indicated that there needed to be new, additional or different types of programs on City Cable 14. Most often, respondents talked about expanding the already wide variety of programs on the Channel. This includes the potential for Fire Department Board Meetings, more programs to educate on the various types of government initiatives that keep the community functioning and covering more arts and entertainment and community events.

Problems in Getting Programs Aired on City Cable 14 -- No respondents indicated any problems with getting their program aired on City Cable 14.

Current Awareness/Promotion of Local Government Access Programming -- Sixty percent (60%) of respondents indicated that current awareness/promotion of local Government Access programming is not adequate. They indicated that promotion needed to be through other avenues beyond just Channel 14, that more marketing would be helpful, that outreach by the various governmental agencies would be useful and that there needs to be more highlights on government documents.

Additional Comments or Concerns -- All respondents were given an opportunity to provide any other comments or concerns about City Cable 14 that they may have. Twenty-five percent (25%) of respondents chose to do so. All of the comments had to do with how great the staff was; that they were very professional and that they provide excellent service.

Average Hours Per Month of Involvement in Government Access Television -- Respondents estimated how many hours per month on average they have been involved with the production or distribution of programming for Government Access television and indicated a wide range from less than one hour to 160 hours.

Facility and Equipment Projections

Based on all the information gathered, facility and equipment projections were made to meet the needs demonstrated. These are provided in detail in the Appendix and are summarized below and in the Conclusions and Recommendations Section.

PEG Access Equipment Projection Baseline Definition

The goal of the PEG Access Equipment Projection Baseline Definition is to help the PEG Access organizations in Fort Collins continue to transition from their current video production environment to high-definition and other digital technology in order to meet the assessed needs. The Needs Assessment Equipment Upgrade and Replacement spreadsheets include a description of the type and range of equipment needed in order to function adequately at the HD digital level. Some equipment that is not related to digital transition, but is still critical, is also included in the spreadsheets.

It is important to understand the difference between standard definition digital (SD) and high definition digital (HD) equipment. SD equipment can either be a 4x3 or 16x9 aspect ratio, but is in a digital format, not analog. SD could be anything from consumer grade to broadcast quality, whereas HD would always have a 16x9 aspect ratio and usually produces a much higher quality than SD video.

Essentially, just like the television production world has moved over time from black and white to color, VHS to DVD (and now Blu-ray) and from analog to standard definition digital, it is now moving to a more fully high-definition digital environment. This means that eventually little or no standard definition digital production and post-production equipment will be left to procure (this is already happening with consumer electronic devices), nor will replacement parts to repair existing SD equipment or support from manufacturers, vendors and distributors for such equipment, be available. Additionally, the cost for high-definition equipment continues to fall, meaning that it is now and will continue to be achievable at a reasonable cost during the transition timeframe proposed.

The reason the broadcast, cable and satellite industries have moved to HDTV is because of the obviously better picture quality and sound quality, which consumers have also recognized. As of April 2013, over 75% of US households have at least 1 HD television set, up from 23% in 2007, according to published research. Over the past 6 years, 59% of US households adopted HDTV. According to the research, the percentage of HDTV homes continues to grow rapidly.

Accordingly, we are recommending new equipment purchases be HD, but in some cases still SD-compatible based on integration with existing equipment. Keep in mind this is a baseline only. Fort Collins PEG Access organizations may choose to integrate additional options or equipment above and beyond the minimum baseline for their particular needs.

The HD digital baseline transition for the major equipment for each entity in each functional area is as follows:

Fort Collins Colorado – PEG Organizations

Field Acquisition

Field Acquisition is the easiest to transition to HD digital because it is an independent process that does not rely on the other functional areas. Current HD cameras offer many professional capabilities and are cost-effective, lightweight, easy to use, and can create spectacular images.

City of Fort Collins:

We have recommended three high-end camera field packages that include: 2 channels of wireless audio along with a full HD camera, tripod, lighting package, audio and accessories. With the size of the City of Fort Collins and the heavy production load and since Cable 14 also produces video for Larimer County, the need for durable high quality field equipment is imperative. Crews are expected to shoot in remote mountain locations as well as in urban areas. Equipment must be of a professional grade capable of doing both.

Poudre School District:

The recommendation to meet the needs assessed for camera field packages for Poudre School District is for three high-end camera field packages that include 2 channels of wireless audio along with a full HD camera, tripod, lighting package, audio and accessories, five consumer grade camera packages that include two channels of wired audio and accessories, an HD camera, tripod and a smaller lighting package and twenty-five prosumer grade packages that include one channel of wired audio and accessories, an HD camera, tripod and a smaller lighting package.

The higher end packages are intended for use by staff at the Channel 10 facility, the consumer grade packages are intended for use by the faculty and students at the Poudre School District High Schools and the prosumer packages are for use in the Elementary and Middle Schools.

Fort Collins Public Access Network (FCPAN):

The recommendation for FCPAN is for two high-end camera field packages that include 2 channels of wireless audio along with a full HD camera, tripod, lighting package, audio and accessories and seven consumer grade camera packages that include one channel of wireless audio and accessories, an HD camera, tripod and a smaller lighting package. Since the mission of FCPAN is to provide equipment for citizens, they need to have equipment capable of accommodating different levels of experience. These packages will be used to shoot and produce myriad programs such as sports events, documentaries, live meetings and coverage of other activities in the community.

Colorado State University:

We are recommending fifteen camera field packages for Colorado State University. These are high-end packages that include: one HD camera, one tripod, a lighting package, and two channels of wireless audio and accessories. Five packages will be used for Staff Producers and ten will be used for Campus TV student producers.

Flypacks are portable units that will enable the users to produce a complete multi-camera production in the field or indoors and allow for staff and independent producers to be flexible and mobile for events from different locations. These locations are an ideal use for combining the flypack with the mobile production vehicle discussed later in this report. The price range varies greatly on flypacks depending on the flexibility needed. We recommend purchasing one new flypack system for each of the entities (City of Fort Collins, FCPAN, Poudre School District and Colorado State University) as shown in the equipment projection spreadsheets. This flypack system will be capable of multi-camera live switching of three robotic cameras as well as insertion of live graphics. Other traditional field cameras can be plugged into and used with this system if desired. It should be HD capable. We've included a fiber encoder in the system to enable live cablecasting from remote locations identified with fiber return feeds at designated sites. These sites could include: French Field, University Center for the Arts, Hughes Stadium, the Lincoln Center as well as other locations on the University campus, High Schools and around town.

Generally, flypacks are used for indoor purposes, such as coverage of public outreach, events and community meetings. When coverage of outdoor events is needed, it is generally better to use the flypack in tandem with a mobile production vehicle for the protection of the equipment. Additionally, the temperature around the equipment can be better regulated and it provides a more ergonomic environment for the production crew. As part of the City of Fort Collins' equipment projection spreadsheet, we have recommended a sprinter-type vehicle for mobile production use combined with this equipment. More details will be given about the mobile production vehicle recommendation in the section below.

Post Production

Post Production is another functional area that lends itself to ease in transitioning to HD due to the fact that it can be done independently.

The major types of equipment involved in the baseline Post Production transition are ingestion, monitoring, digital audio mixing, an editing system, and a portable solid-state recorder.

Ingestion is the ability to move video and audio into the computer environment from various sources for editing.

For most entities, we have recommended an edit suite system, which vary in number based on the entities' needs. For FCPAN, we have also recommended two portable editing units.

Also of note in Post Production would be the editing systems that have been recommended for Poudre School District. These systems are of two types: one being a higher-end, full-feature edit system and the other being thirty-four small computers able to run software such as i-Movie. The full-featured edit systems are intended for use in the Channel 10 production area. Thirty of the other systems will be deployed to the elementary and middle schools and the remaining 4 systems are intended for use in the Media Center.

Infrastructure

Infrastructure includes all equipment such as, Encoders/Decoders, Routers, Optical Transmitters/Receivers, Signal Converters, wiring and cabling needed throughout the facility to distribute high-quality HD signals. Since the infrastructure is the backbone for all existing and new equipment needed to communicate throughout the facility, and transport the Access channels to the headend, it is essential that this functional area be upgraded with the ability to handle the new and existing equipment. It is important to have the right infrastructure in place to support the conversion of SD to HD.

Specifically regarding Access signal origination, the Fort Collins City Channel is modulated by a channel 14 analog modulator and then fed to a fiber optic transmitter, at City Hall, which feeds the signal, in analog format, back to Comcast's headend. The same fiber optic transmitter is fed with a signal from Aims Community College with a channel 96 analog modulator and FCPAN feeds the transmitter with a channel 97 analog modulator.

The Poudre School District has a variety of signal feeds. First, it has an incoming signal from the Board Room Building, via coaxial cable, to the Administration Building. This signal is a channel T-8 analog channel.

The School District also has demodulators that receive analog T-9 signals, fed from a fiber optic receiver with fiber connections to each of the following schools: Fort Collins High School, Poudre High School and Rocky Mountain High School. In addition, there is a fiber optic receiver for Fossil Ridge High School in the chassis, with receivers for each of the high schools listed above, but there is not a coaxial cable coming out of the receiver.

The above signals are fed to a switcher with the final output being fed to a channel 10 analog modulator. This channel 10 signal is inserted onto a fiber optic cable and sent to Comcast for insertion onto the School District's channel.

Colorado State University feeds its video and audio to a channel L analog modulator which is then inserted onto a coaxial cable and fed back to Comcast's headend for insertion onto the subscriber system.

Once the above described signals are received at Comcast's headend, they are encoded, by multi-channel Ion encoders, to an IP digital format and inserted onto Comcast's Converged Regional Area Network (CRAN) with all other (non-PEG) channels. All of these channels are then "picked" off of the CRAN for insertion onto the subscriber system in their proper position in the forward spectrum of the system. Because Comcast has a fiber optic path at all of the video origination sites described above, except for CSU, Comcast should move these ION Encoders to the City Hall and School District Administration Building, encode the channels at these locations, transport them back to the headend in a digital IP format and simply insert them onto the CRAN as is done today. This solution can be accomplished now to improve the signal quality of all of the PEG channels in the short term, except for CSU's channel which has a coaxial cable transport medium. In addition, the feed from the Board Room Building, via coaxial cable, to the Administration Building needs to be replaced with a fiber optic path and activated with single channel SDI transport equipment. In addition, the feeds from the high schools need to be upgraded to HD SDI signals as well. These changes will vastly improve the

quality of these signals from what they are today in their analog formats. Furthermore, the coaxial transport link from CSU to Comcast's headend should be replaced with a point to point fiber optic transport medium, and then the above described encoding scenario can be implemented at CSU to feed a digital format signal directly to the CRAN.

As the PEG facilities are upgraded to HD format, the above described IONs will need to be upgraded to accept HD SDI signals, if the IONs do not currently have this capability.

We have recommended a necessary complement for each facility as shown in the equipment projection spreadsheet.

Archival/Storage

As production facilities grow, produce and provide all programming in HD requiring greater capacity, the need for more archival/storage will increase as well. This enables staff and producers to save and share their work.

Archival and storage is also used to house finished programs that can be accessed by citizens and students for on-demand viewing of programs. Not only can programs be archived, but they can be categorized by subject, producer, event type, or date and can be stored in various file types.

Even though the PEG Access entities in Fort Collins already have some of this technology in place, we have included costs for upgrades and growth throughout the 10-year projected timeframe.

We are recommending that the City of Fort Collins have an additional 64 terabytes of storage over the 10 year replacement schedule. The Poudre School District recommendation includes an additional 60 terabytes and for FCPAN 20 terabytes is recommended.

It is recommended that Colorado State University have an additional 64 terabytes of storage over the 10 year projected timeframe. We have recommended 32 terabytes be purchased in Year Two and an additional 32 terabytes in Year Seven.

Headend/Playback

The production servers need to have the capability for both standard and HD playback, moving to all HD in the future, have the ability to have programs transferred to them over the network (real-time ingestion) and have a robust scheduling capability to enable a well-rounded playback resource. Fort Collins PEG Access entities are currently using an SD-capable playback server because the cable provider is only providing SD. Even though they are equipped with digital technology, it should be ready and equipped to cablecast with HD playback capabilities. We have estimated costs to upgrade the current playback systems for each entity in the attached spreadsheets.

Another item identified in this section is a character generator capable of 24/7 playback of on-air bulletin board information. The character generator will enable the playback of video sources as well as the bulletin board information required by staff. It should also be noted that a separate character generator may not be needed, as the server-based playback system may already have this technology in place.

On Demand/Streaming

Both Internet streaming and Video on Demand (VOD) streaming have become an integral part of many production facilities' outreach to the public, especially consumers without cable television services. With this in mind, video streaming equipment needs to be capable of handling signals within the facility, be HD compatible and in most cases, capable of running 24/7. The equipment should also include both live streaming and VOD capability and is included in the cost for the types of playback systems we are recommending. This system should be robust enough to enable the simultaneous encoding of multiple feeds thus saving time and increasing efficiency for staff and the turnaround time for distribution of Access programming.

Satellite down-linking technology is in use at Poudre School District for acquiring programs via satellite. We have included the cost for an HD Satellite Receiver to enable the acquisition of HD programming by the District.

We have also recommended the satellite technology for Colorado State University. CSU is required to receive and distribute programming from other educational institutions as well as other sites that supply content.

It should be noted that currently FCPAN does not have streaming capability. In the accompanying spreadsheet, we have recommended equipment for this capability to be added in the future.

Studio/Studio Control

Studio Acquisition, along with Studio Control, is considered the main nerve center of many production facilities. This is why there are large amounts of resources and funds that typically need to be committed to these two areas.

We recommend that all the studios be equipped with cameras that are HD capable. Studio Acquisition includes other pieces of equipment used in a traditional studio environment such as confidence monitors. These will all need to be purchased to handle HD signals, as the Fort Collins PEG Access entities transition to all HD technology.

There is variability in the type and cost of virtual sets, and the Fort Collins PEG Access entities have a wide variety of virtual set needs as well. The competitive multichannel video environment is fueled by the expansion of television channels. There is increasing pressure to lower costs while at the same time increasing production. All content providers need to continue to seek better, faster and more economical ways to deliver a greater range of program offerings.

Virtual set technology perfectly fits the demand to produce and deliver more with less. As facilities move towards maximizing their operations, virtual set technology is used to maximize workflows and become a mainstream application in daily media production. An example of

different uses of virtual set technology is the ability to add special effects behind the talent such as virtual monitors or other video sources that can be layered with the talent. Detailed in the accompanying spreadsheet is virtual set technology that should enable the Fort Collins PEG Access organizations to increase production of programs using this technology.

Within Studio Control is equipment such as the Video Production Switcher. This is the nerve center of most studio control rooms. It is important that the switcher be reliable and state-of-the-art. The switcher should be equipped with multiple layering and keying capability and should include chromakey and virtual set technology.

Miscellaneous distribution amplifiers and cabling are included in the attached spreadsheet to enable the interconnectivity between the studio control room and the rest of the production facility, including studio monitoring and connection to the audio/video routing system.

In addition to Studio and Studio Control, the City of Fort Collins has additional spaces from which they hold meetings that require media production. These locations are the Council Chambers, Community Room, Council Information Center, the Police Community Room and the Lincoln Center. Cable 14 both records and generates live programming from these locations on a regular basis. Because of these needs, we have forecasted additional resources for infrastructure and equipment to control productions for these areas.

Poudre School District has a unique need for both traditional studio cameras as well as robotic cameras. This is because the studio is used for both staff productions as well as teaching students how to operate cameras.

Poudre School District also televises meetings from their School Board Room on a regular basis. We have recommended equipment upgrades to enable them to produce programming in HD in the future from this room.

The type of productions done in the Colorado State University studio varies from news production to complete virtual set productions which require the studio to have a large scale

cyclorama wall. This wall already exists in their studio, so any virtual set technology purchased should support the existing infrastructure.

The accompanying spreadsheet includes a robust lighting package for Colorado State University. This is intended to support virtual set productions used in their studio.

Mobile Production Vehicle

A Mobile Production vehicle is a valuable and flexible resource for any video production staff. It is proposed that the City of Fort Collins administer the shared use of a mobile production vehicle with all the PEG Access entities. With the amount of activities and events that take place around the City, a shared vehicle would benefit all the organizations and have the ability to expand coverage of these events and showcase the City of Fort Collins to a wider audience. We recommend that the Mobile Production vehicle be a sprinter-type van that is capable of housing and transporting the HD flypack and have patch panels and a climate control system.

Ancillary Equipment

The purpose of this category is to enable the Fort Collins PEG Access entities to budget for equipment needed that is ancillary to the digital upgrade. This type of equipment would include items such as microphones, conventional sets, teleprompter equipment, PA, miscellaneous stands, tripods, recorders, computers, studio fixtures, etc, plus their upgrades and replacements. Basically, it is equipment needed to complete the production facility for PEG Access production purposes.

Conclusions and Recommendations

After review and analysis of all the data and information gathered from the focused discussions, follow-up phone calls and interviews, onsite facility reviews and related web-based and written documents and materials, as well as the written residential and organizational on-line Questionnaires, during the PEG Access Needs and Interests Assessment portion of the Needs Ascertainment Project, CBG has developed the following conclusions and recommendations (along with others noted in companion sections of the entire TRC Report such as the Residential Community Needs Assessment and the Public Forum and Organizational Community Assessment Sections). Ways to fulfill these needs should be pursued with Comcast during franchise renewal negotiations.

1. Initial Access Channel Capacity -- Access channel capacity and related channel positions, satisfactory to the City and PEG Access organizations, need to be preserved and expanded as described below. This includes continuation of delivery of:

- Fort Collins City Cable Channel 14 (Government Access programming).
- Aims TV Channel 96 (Educational Access programming from Aims Community College. This is currently being provided in lieu of a second Government Access Channel. Our study has concluded that the Channel should continue to be provided, but may migrate to a second Government Access Channel, once programming continues to expand for the City of Fort Collins and Larimer County, or the amount of live and post-produced programming continues to expand, such that separate identities are needed for two Government Access Channels.)
- Poudre School District Channel 10 (K-12 Educational Access programming provided by PSD).
- CSU-TV Channel 11 (Higher Educational Access programming provided by Colorado State University).
- FCPAN Channel 97 (Public/Community Access programming, provided by the Fort Collins Public Access Network).

In addition to the above, over the course of any renewed cable franchise, as the amount of HD programming continues to increase for all categories of PEG Access, as time-shifted viewing continues to increase by subscribers and as additional advanced platforms of video delivery continue to evolve on the cable system, additional Access Channels, capacity and delivery methods need to be made available. This availability needs to include sufficient capacity for the services to be provided without deterioration in quality and equal to the best commercial services in the same format.

- 2. Provision of Advanced Services and Through Multiple Platforms** -- With the Comcast system now converted to an entirely digital format, adequate Access Channel capacity, along with any necessary technical modifications and equipment that may be needed in the future to facilitate the provision of all necessary capacity, needs to be provided. Based on the needs assessed, we recommend that provisions be made, such that the cable system provides the following for all PEG Access entities:

- All of their channels as real time services;
- Enough Video-on-Demand (VOD) capacity to ensure that both highly time-sensitive and evergreen programming for each PEG Access entity can be accessed on the VOD platform;
- All Access Channels provided in High Definition (and potentially in HD 4K, 3D, or other advanced formats provided over the life of the Franchise); and
- Programming provided as interactive television (iTV) services for certain uses identified herein, especially for educational and community programmers.

- 3. Access Equipment** -- New, upgraded and replacement equipment for the Community/Public, Governmental and Educational Access Channels needs to be provided consistent with the projections shown in the Appendix. Equipment category projections have been made from the information provided by the City, FCPAN, PSD, CSU, and associated stakeholders, as well as that obtained through onsite review of equipment amounts, types and conditions, along with the projections for expansions in the nature and level of Access content development. Our review indicates that the

following Access equipment funding would be needed over the course of a 10 year timeframe within any renewed franchise to meet the needs assessed:

- *City of Fort Collins City Cable 14* -- To provide new, upgraded and replacement equipment for City Cable 14 to facilitate the Government Access programming produced both at City Hall, as well as in offsite community room locations and through other portable and mobile remote operations, \$2,808,360 (\$2,340,300 base cost, plus \$468,060 installation/training/warranty cost) will be needed during the projected 10 year timeframe, in order to support the government programmatic initiatives indicated by our Assessment findings.
- *K-12 Educational Access* -- To provide new, upgraded and replacement equipment for PSD Channel 10 for Educational Access programming produced both at the Channel 10 Media Center, as well as in the Board Room, at the four comprehensive high schools and at other schools throughout the District, \$2,841,360 (\$2,367,800 base cost, plus \$473,560 installation/training/warranty cost) will be needed during the projected 10 year timeframe to support the K-12 programmatic initiatives indicated by our Assessment findings.
- *Higher Educational Access* -- To provide new, upgraded and replacement equipment for CSU-TV 11 to facilitate higher educational access programming produced at the CSU-TV 11 facility, around the CSU campus and throughout the Fort Collins community, \$2,458,800 (\$2,049,000 base cost, plus \$409,800 installation/training/warranty cost) is needed during the 10 year timeframe to support the higher education programmatic initiatives indicated by our Assessment findings.
- *Public/Community Access FCPAN Channel 97* -- To provide new, upgraded and replacement equipment for FCPAN to facilitate Public/Community Access programming produced both at the existing and planned FCPAN facility, as well

as through portable and mobile remote operations, \$1,623,360 (\$1,352,800 base cost, plus \$270,560 installation/training/warranty cost) is needed during the projected 10 year timeframe to support the Public/Community Access programmatic initiatives indicated by our Assessment findings.

4. **Access Facilities** -- The Needs Assessment indicates that existing space, and planned new space for FCPAN, will be adequate to support PEG Access operations during any renewed cable franchise during the next 10 years. However, this considers that FCPAN and the City will be able to achieve successful implementation of FCPAN operations at the Carnegie Building (old library). If this does not occur, then additional funding may be needed to support development of a new FCPAN facility in another location.
5. **Capital Support for Facilities and Equipment** -- As indicated above, for equipment, the total dollar figure needed over a 10 year period equals \$9,731,880 (\$8,109,900 base cost, plus \$1,621,980 in installation/training/ warranty cost). Note that in some years, the needs are significantly greater than in other years and create a situation where high amounts of funding are needed for that particular year. Examples include Year 1 (\$1,808,310 in equipment needs) and Year 2 (\$1,458,630 in equipment needs). Depending on how funding is provided, there may be the need for capital fund advances and grants in those years over what may be traditionally provided as PEG support by way of PEG Fee payments.

Subscribers in the Fort Collins area are currently providing a per subscriber, per month PEG Fee in support of PEG Access needs, of \$0.50 per subscriber, per month. Over a 10 year period, if subscribership holds steady at existing levels, and all subscribers in the Fort Collins area are factored in, the sum projected to be generated would be approximately \$1.8 million. This falls well short of the PEG Access needs described herein, meaning that there will need to be an increase in the amount of funding currently generated.

D: Technical audit of the cable television system.

Introduction

As part of the past performance review and needs assessment conducted by the City of Fort Collins, CO (“City”), CBG Communications, Inc. (“CBG”) has completed our technical audit evaluating Comcast’s residential and business cable television subscriber network.

CBG’s overall goals were to evaluate Comcast’s compliance with the City’s franchise documents, and applicable laws and regulations, and to determine the condition of Comcast’s equipment and infrastructure and the operation of this infrastructure.

CBG conducted evaluation tasks, document review, system physical plant (infrastructure) audit driveout, facility tours and discussions with Comcast staff, discussions with City staff, and other processes to determine the existing condition of Comcast’s subscriber network in Fort Collins. The network review included the headend, fiber optic and coaxial infrastructure and their ability to deliver services to residents and businesses of the City, reliably and in a safe manner, consistent with the requirements of the franchise and applicable laws and regulations.

The major findings and recommendations of CBG’s review and evaluation are outlined below in this Report.

Findings related to Comcast’s Residential Network

The beginning of a technical audit or system review is to seek various information from the cable TV system operator in order to establish a baseline and make informed determinations related to the system’s performance. This request is in the form of a “Request For Information” (“RFI”) and was sent to Comcast on September 10, 2013. Later in September, Comcast asked for, and received from the City, an extension of time to provide the requested information due to flooding in Colorado that impacted Comcast’s ability to provide the information by the original date requested. The City

agreed, with Comcast, to extend the deadline for Comcast to provide the information from October 9, 2013 to November 11, 2013. Comcast then sent a request for a Non-Disclosure Agreement (NDA), on October 31,, 2013, to be in place before providing information they deemed confidential. The City's team worked with Comcast to get a NDA signed prior to November 11, 2013 and Comcast then provided the requested information. Based on CBG's experience during prior technical audits, some providers, were less than cooperative. Indeed, responses to requests for information have varied with cable companies from one system to next. In light of this, we recommend that the City have requirements in any cable franchise that requires the cable provider to supply technical documentation required to determine the technical capabilities and capacity of the system, as well as documentation showing the maintenance of the system and system reliability.

System Design and Architecture

Comcast is operating a Hybrid Fiber Coaxial cable ("HFC") network that is designed to provide video (Cable TV), Internet and data services and telephone services with coaxial cable connections to most addresses within the City's service area.

Comcast's system architecture begins at the regional headend located in Fort Collins, CO. This headend receives and transmits signals to/from its national headend in the Denver, CO area. Comcast, from its Fort Collins headend, uses fiber optic cable to send and receive signals to/from nodes located in neighborhoods, throughout the City's service area, where forward (or downstream) signals are transformed from light, on the fiber optic infrastructure, to Radio Frequencies (RF) for insertion onto the coaxial cable infrastructure for ultimate transmission and distribution to residents and businesses served by the particular node. Forward (or downstream) services include all standard definition ("SD") digital and high definition ("HD") digital channels including Video-On-Demand ("VOD") and 3DTV channels. Additionally, Internet data, traveling from Comcast's headend to subscribers, and telephone or voice service to subscribers is carried on the forward/downstream portion of the network. In addition, the nodes

receive RF signals from subscribers via the coaxial cable infrastructure which feeds these signals into the node. The node converts these signals to light for transmission, via the fiber optic infrastructure, to Comcast's headend. Some return signals include upstream data, ordering information for VOD and other video services as well as telephone traffic.

Spectrum or Bandwidth

The total spectrum utilized by a system dictates the level of services that can be provided by the network. System spectrum can also be described as the bandwidth of the system which is important to understand. Comcast's system, as designed and operated today, has a total usable spectrum of 5 MHz to 750 MHz (5 million to 750 million Hertz). Simply stated, the system is a 750 MHz system. Further defined, the return (or upstream) system is designed for signals between 5 MHz and 42 MHz. Comcast transmits signals between 54 MHz and 750 MHz on the forward or downstream portion of their system.

The system was originally built in the 1980's, has been upgraded over time and was considered to be at or near state-of-the-art at the time it was last upgraded. Systems being upgraded today are using equipment capable of between 860 MHz and 1,000 MHz (1 GHz). Although this system is not the most advanced system constructed, it is consistent, in terms of bandwidth, with many systems in service today throughout the country.

The system spectrum described above translates into system bandwidth or capacity. It is difficult, even with the frequency allocation chart provided by Comcast, to describe the maximum number of channels, or services, that can be provided on the subscriber network, as the bandwidth utilized for specific channels and services can be determined at the system level. For instance, compression technologies, which are continually being enhanced, allow for Standard Definition digital TV channels to commonly utilize one 6 MHz channel to transmit between 7-15 SD channels. Furthermore, 2-3 High Definition digital channels occupy one 6 MHz channel. In addition, the system is configured and

used to provide non-cable TV services, including telephone and Internet service which occupy a portion of the system's bandwidth.

Based on frequency allocation charts provided by Comcast and publically available channel line-ups, the system, as constructed, equipped and operated, can provide the services desired by Comcast's customers today. However, as more services become available (particularly high definition video programming services) and yet to be rolled out Ultra High Definition Television (4K HD), which will use as much as 2 times the bandwidth as current HD technologies (4K \approx 4,000 pixels, current HD \approx 2,000 pixels), and as subscribers' needs and desires change and increase, the existing bandwidth may not be adequate to fulfill these needs in the future. Furthermore, although Comcast deploys compression techniques to increase the number of channels that can fit on the system, they continue to use less of the available bandwidth for video services. For instance, when the system was first upgraded to 750 MHz system (700 MHz in the forward direction) approximately 95% of the available bandwidth was used for video services. Today, although Comcast still has 700 MHz of available forward bandwidth, approximately 25% of the available bandwidth is utilized for non-video services such as high-speed internet, telephony, home security, etc.

Comcast may need to upgrade its current system, depending on the length of any franchise renewal term, to gain additional bandwidth in order to provide the existing services and new services. Such upgrades could include using new electronic equipment to increase the system capacity to 1,000 MHz (1 gigahertz or 1 GHz), deploying fiber to the premises or home (FTTP or FTTH) as well as utilizing technologies that conserve bandwidth such as Switched Digital Video (SDV). The City should, in a renewed franchise with Comcast, at a minimum, require a Triennial review of the system to determine if it is still capable of meeting the communities' cable-related needs and interests, and providing the needed bandwidth for new services that become available in the future.

System Facilities

Comcast serves the City from its headend in Fort Collins. CBG toured the headend facility in January 2014. In addition, Comcast provided information describing the headend and discussions have been held with Comcast personnel as additional data or information was required. Our findings are that the overall condition of these facilities was clean and well kept, but there is limited room in the headend for future equipment expansion.

Grounding of equipment in various locations throughout the headend is more than adequate for protection of the equipment and personnel having to perform maintenance.

The headend facility has backup power provided by a large permanent generator and battery banks providing -48 VDC power to much of the equipment in the headend, as well as a large Uninterruptable Power Supply (UPS) in the headend that produce 120VAC power to all other equipment in the headend. These combinations of backup power should allow for seamless transfer between commercial power and backup or standby power in the event of a power failure at the headend. The generators run on diesel fuel and are capable of operating for 48 hours with no staff interaction and for days or weeks with refueling, in the event of a lengthy commercial power outage.

Headends and hubs in cable TV systems across the country also have a system to suppress fires that may occur. Rather than using a sprinkler system where water is used to put out a fire, as would be the case in an office setting, in rooms where reliability is critical for electronic equipment, systems are installed that extinguish fires without water and therefore no damage to equipment occurs in the case of a small fire or accidental deployment.

Comcast does not have a fire suppression system in the Fort Collins headend. In CBG's experience, it is rare for a headend or hub of this significance to not have fire suppression. It is even rarer to not find a professionally installed fire suppression system in a Comcast headend or hub. Not having a fire suppression system installed could result in a small fire expanding to a catastrophic level resulting in the headend and all of its contents being destroyed. If this were to occur, the entire City of Fort Collins, and many of the neighboring communities, would be without TV, Internet and phone service provided by Comcast. Furthermore, it would likely take Comcast at least several days and potentially weeks or months to replace the headend even in a temporary fashion. CBG strongly recommends that the City require fire suppression be installed in the headend to remedy this problem.

System Performance

CBG has historically begun its analysis of cable systems by reviewing a system's most recent Federal Communication Commission (FCC) Proof-of-Performance (POP) test documents. These documents are required to be stored in a system's Public File and to be available for inspection by the Federal Communications Commission or the local franchisor. However, because Comcast removed all analog channels from its system and became an all digital system in 2011, Comcast no longer performs these tests.

The FCC does have requirements in place, §47CFR76.640, that a Cable TV provider must maintain certain standards on digital channels on its system. However, the FCC's rules do not dictate where testing is to be done or how often the tests must be performed. Additionally, there is no requirement for cable providers to document or archive findings related to these tests.

Comcast has not been heretofore documenting these tests as they were not specifically testing for the specific digital performance parameters specified by the FCC. Comcast

does plan to perform these tests regularly in the future and should be required to provide documentation to the City showing the results.

As part of CBG's site visit, we oversaw Comcast personnel performing tests at five locations within the City to show compliance with FCC 47 C.F.R. § 76.640 (Digital Standards). In addition to this testing, CBG viewed a system spectrum trace showing the response of the system. Initially, two of the five locations had failed readings related to minimum signal level on the system using a 100 foot long drop feeding a meter from a tap on the system. We found that an incorrect setting on the meter caused the problem to appear at one location and a tap was changed out at the second failed location. The location where the tap was changed out was specifically set up to have lower levels to accommodate system monitoring.

Comcast reran the tests at both of these locations and the subsequent tests were well within specification.

Subjective Viewing of SD and HD Channels on the System

As part of our testing, CBG also subjectively viewed SD and HD channels on a television set at the five locations within the City, where the above mentioned testing was performed, to determine through subjective testing what, if any, signal quality problems currently exist. Digital signals are typically either on or off with few if any distortions added by the network outside of undesired attributes that can be introduced as a result of significant compression of channels to conserve bandwidth. However, when distortions and noise are significant enough, pixelation and picture freeze-ups can occur.

Our observations found that, in general, the HD channels on the system are very crisp with little, if any pixelation or other undesired attributes noted. Our observation of the SD channels showed a varying degree of unwanted attributes that appear as noise in the pictures. Because pictures often include action or moving images, this isn't always seen by customers on their TV sets. This type of distortion is frequently due to problems that

some television receivers have dealing with the compression in digital signal transmissions. In addition, this distortion is more readily observed on TV sets of 40 inches or larger and appears less objectionable on older picture tube screens (which also tend to be smaller than 40 inches) and Plasma screens compared to LCD and LED televisions. This distortion is most often referred to as “mosquito noise” and is easily seen around graphics or bugs (small digital graphics often in the lower corner of the screen used to identify the channel being watched) appearing on the TV screen but it becomes more apparent throughout the TV picture as it becomes more severe. It is our experience that although we performed our subjective viewing at five locations, these results will likely be seen throughout the system.

This problem appears to be overlooked by most subscribers and is likely explained in part by the fact that people who have larger TV sets are more likely to have HD service and therefore watch programs in the High Definition format where mosquito noise is far less prevalent. Furthermore, people with smaller SD or analog TVs will likely not see mosquito noise as it does not become evident on smaller TV screens.



¹⁶ This particular image is from “Embedded’s website. The white arrows point to “Mosquito Noise” in a Digital TV picture.

Standby Power

Standby power provides the system with the capability to remain operational when commercial power is lost for any period of time. Comcast employs several backup power methodologies, from the headend to the power supplies located on the distribution system in the field.

Comcast has a large backup generator system located at the headend that is capable of backing up the entire facility if a commercial power failure occurs. This generator is designed to provide enough power to keep the headend operational in the event of a power outage at this critical location. In addition, because there is a lagtime of several seconds between the loss of power and the generator coming fully on-line, Comcast also has large banks of batteries that are designed to provide power to all headend equipment that operates on -48VDC while continually being recharged as normal

¹⁶ <http://www.embedded.com/design/embedded/4013028/Video-compression-artifacts-and-MPEG-noise-reduction>

procedure. When power is lost, these battery banks will continue to provide power, without any outside power, for a designed minimum of five hours. For all critical equipment that operates on 120VAC power, Uninterruptable Power Supplies (UPS) are in place to run this equipment for up to 40 minutes until the back-up generator is operational. All of these powering components are continually monitored by Comcast staff and problems are addressed prior to them impacting services. For instance, Comcast has documentation of the age and condition of its battery banks and knows how long the batteries will perform in the event of a power failure.

Comcast has power supplies located on the distribution plant to provide power to the nodes and amplifiers used in the field. These power supplies are equipped with batteries that provide backup power in the event of a commercial power outage in much the same way the headend backup battery power is provided. Based on information provided by Comcast, these power supplies are capable of running, without commercial or other power sources, for just over three hours. This run time will increase based on lower power needs at some power supply locations. The power supplies are maintained on a regular basis and continually monitored by the Network Operations Center (NOC).

Status Monitoring

Comcast has deployed numerous tools to monitor the operation of the network in real-time. For instance, many of these tools monitor all of the cable modems in the system showing areas of the system that are not responding and, therefore, are experiencing an outage. Other monitoring tools provide data on the performance of the network. For instance, the signal to noise ratio or C/N and other distortions can be measured and monitored throughout the system via cable modems at subscribers' homes and businesses. The system is watched to proactively monitor where the performance of the system is beginning to drop allowing technicians to be dispatched to remedy the problem before it impacts customers. Other monitoring tools can measure the health of power supplies in the system and alert Comcast when issues arise that need further

troubleshooting and repair. An example of this is when a power supply goes into standby mode because of a commercial power outage, the standby functionality in the power supply will keep the cable system running for approximately 3 hours. Status monitoring tools will notify the NOC that the power supply is running on batteries and will keep staff apprised of how long the supply will stay operating on battery back-up. When the batteries are drained to a certain level, Comcast personnel can connect a portable gas operated generator to the power supply and continue to keep the system running flawlessly for several hours or even days without commercial power. These tools can provide Comcast with data showing where other problems occur and often times staff can react to, and repair, problems before the network user knows of the problem. In the event of an outage, the monitoring tools can help resolve the problem in a timely manner by pinpointing or at least narrowing the area where the problem exists.

As stated above, Comcast employs several tools to perform ongoing monitoring of its residential network. These tools are at least comparable to monitoring systems in place in other cable systems throughout the country.

Outages and Outage Documentation

CBG, as part of the information provided by Comcast in response to the RFI, received documentation showing outages experienced by subscribers in the City's service area. Our review of Comcast's documentation shows that outages are well documented and this documentation does not indicate a large number of outages or an overall pattern of longer than acceptable repair times when outages occur. For instance, approximately 75% of all reported outages lasted less than one hour and nearly 95% of all outages are resolved and the system is back on-line within two hours. This is likely, in part, due to the monitoring tools in place today. These tools, as described above, help eliminate outages by alerting Comcast to pending outage-causing problems, and also provide Comcast with valuable information in the event of an outage that helps determine

where the problem is occurring. This speeds the troubleshooting process and therefore reduces the time to repair the problem.

Compliance with the National Electrical Code (NEC) and National Electrical Safety Code (NESC)

CBG performed an independent cable system drive-out and physical infrastructure audit to note any problems with the system plant and drops to residences and businesses, pertaining to the condition of underground and aerial cable and appurtenances, grounding and bonding, as well as clearance and attachment issues. If a system is not properly maintained, problems will arise with the aesthetics of the system, but more importantly, such issues result in potential safety problems. In addition to appearance and safety issues, the integrity of the cable plant is important for proper operation of the network and its ability to deliver high quality signals in a reliable manner.

The City of Fort Collins is comprised of all utilities being underground in the large majority of the City. Therefore, far fewer problems were found related to aerial plant in Fort Collins compared to most other systems inspected by CBG in the past.

CBG, with assistance from City staff, picked 151 random addresses throughout the City to visit for inspection of Comcast's infrastructure up to and including the outside of the served building. The City provided a list of residential and business addresses in the City with a total of 66,351 addresses. Therefore, CBG inspected Comcast's facilities at every 439th address on the address list for a total of 151 addresses checked.

The sample included a diverse representation of dwelling units in the City, from single family housing to duplexes, quad-homes and large apartment buildings and complexes. In addition, the sample included small and large business addresses in the City. Furthermore, the sample included a geographically dispersed representation of addresses in both the limited aerial portions and underground portions of Comcast's system in the City. This review method allows us to make an overall evaluation in a

statistically valid manner of how Comcast's system is constructed and maintained throughout Fort Collins.

All identified drops to residences or businesses were inspected for compliance with NEC and NESC codes. Both codes require that cables and other infrastructure must be maintained even when abandoned or unused. Therefore, drops were inspected in the same manner whether active, disconnected or abandoned. Comcast, like most cable companies, regularly leaves drops in place when a customer disconnects service and reuses the drop if the address becomes an active account in the future. Comcast must maintain these drops in order to meet all applicable codes. For this reason, the percentage of homes and businesses where drops exist is significantly higher than the percentage of current customers in the City.

Methodology used to estimate the total number of problems Citywide - To illustrate how the findings of this Technical Inspection can be applied Citywide; we provide the following hypothetical examples:

For issues affecting the drop from the pole or pedestal to the residence or business, one can produce the following estimation of the total number of similar problems on a City-wide basis:

If drop related problems were found at 25 City addresses, this number divided by 151 would equal 16.6% of inspected addresses having the same or similar problem. This applied across the entire City would equate to 16.6% times 66,351 addresses for an estimated 11,014 similar problems Citywide. It must be noted, with a sample of this size, the margin of error rate is $\pm 6.7\%$. Further explained, this would mean if the survey were redone with a new random sample of addresses throughout the City, the findings should be the same as found in this sample $\pm 6.7\%$. Taking the above example, this is

mathematically shown as $16.6\% \pm 6.7\%$ or 6,569 (9.9%) to 15,460 (23.3%) similar issues Citywide.

Some problems found during the driveout can be linked to more than one address. For instance, if a pedestal or pole, with a problem, is on the property line between 101 and 103 1st Street, both addresses have a problem but it cannot be shown as two separate problems based on the two addresses. Therefore we have used the following methodology in these cases to derive a good faith estimate of the number of problems Citywide:

- We estimate each pedestal serves or potentially serves 2.5 addresses based on an average that takes into account that many pedestals in front yards serve 1-2 addresses, some pedestals in backyards serve 2 to 4 addresses and some pedestals, such as at multiple dwelling units, serve from 2 to upwards of 20 residential units.
- We estimate that each pole, where inspections were performed, serves an average of 2.5 addresses based on between 1 and 4 residences being served by most poles, with a small number of poles serving a higher number of homes such as at multiple dwelling units.

Accordingly, if a problem is found at a pedestal or pole, the following example demonstrates the method used to estimate the number of problems at poles or pedestals Citywide:

- If 50 problems were found at poles (aerial) or pedestals (underground) serving some of the 151 random sample addresses, divided by 151 locations inspected, this equates to 33.1% if all addresses had their own pole or pedestal.
- Since we estimate that each pole or pedestal serves 2.5 addresses, we would take 33.3% divided by 2.5 or 13.3% of the poles or pedestals are deemed to have a problem.

- Taken across the entire City, this would equate to 13.3% times 66,351 addresses, which equals 8,825 poles or pedestals Citywide with a problem.
- Applying the margin of error, this would result in 6.6% to 20% of all poles and pedestals having a problem, or 4,379 to 13,270 similar pole or pedestal problems Citywide.

A few conditions that affected the application of our methodology include:

- Where we found no drop in place, no home or building at a particular address or a drop that was not connected at the house, it was determined to be a “no problem found” location.
- When we could not gain access to a yard and therefore could not inspect the drop, it was also considered a “no problem found” location. Determining that locations with no drop or where access was not possible are “no problem found”, potentially produces a slightly lower percentage of problems projected than actually exist.

Technical Inspection findings - Comcast needs to regularly inspect and repair problems that arise on its system in order to maintain a network that is safe to the public, Comcast employees working on or around the system, as well as personnel from other tenants of the Right of Way in the City who must work in close proximity to Comcast’s facilities. Furthermore, NESC Code 214 requires that “lines and equipment shall be inspected at such intervals as experience has shown to be necessary.”

As discussed above, CBG performed an inspection of a representative sampling of areas throughout the City. It must be noted that this driveout should be viewed as a representation of issues that exist throughout the system. The list of issues and code violations attached to this Report as Attachment D is not to be viewed as an all-inclusive list of issues throughout the City’s service area. During this sampling, we identified approximately 65 issues that are either violations of NEC or NESC codes or are simply

outside of good engineering practices while visiting the 151 sample addresses. In Attachment D, CBG also notes 16 issues that were not located at one of the 151 sample addresses, but were identified during our system driveout.

We have combined all issues found into two categories. The first category is all issues with drops as they leave the pole or pedestal up to the side of the residence or business. This includes: drops that are not properly buried; drops that don't have the proper clearance to roadways or the ground; grounding/bonding issues at the residence or business; and overall workmanship related to the drop.

The second category of issues is at the pole or pedestal. This category includes: open, unsecure or smashed pedestals; pedestals leaning significantly; missing grounds/bonds at pedestals and poles; drops and hardline cables on poles that are not secured to the pole sufficiently or correctly; down guys that are missing or loose; etc.

All of the issues included in both categories are further explained below.

Examples of our findings include:

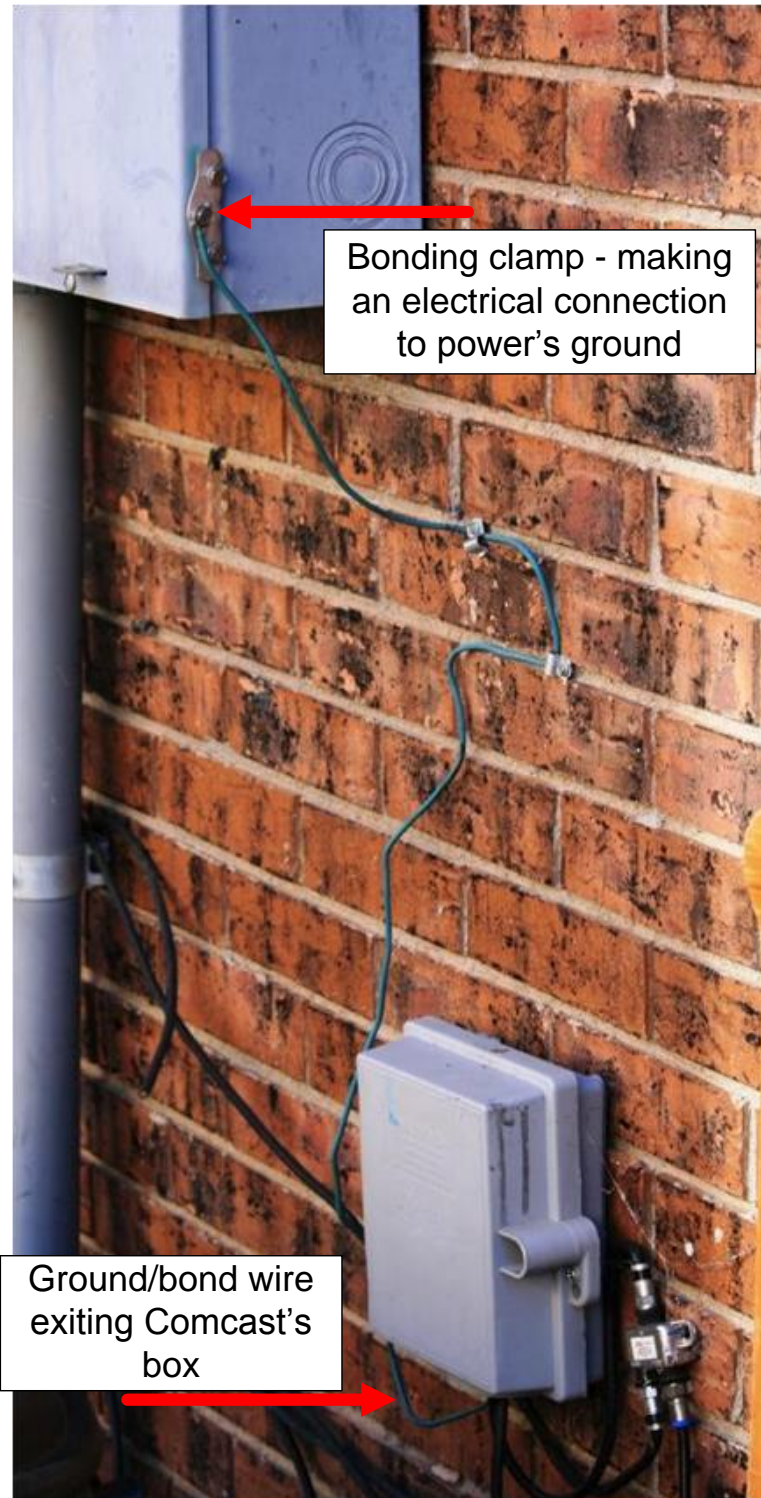
System Grounding and Bonding - A system must be grounded properly to provide a path to ground for stray voltages such as lightning or power conductors coming into contact with the cable system. In a similar manner, the distribution system and drops must be bonded to other utilities in order to ensure that there is not a voltage difference between them. If they are not properly bonded, there will most likely be a difference in electrical potential between the systems, thereby producing a shock hazard if both utilities are touched at the same time. Code requirements for grounding and bonding of cable TV networks and drops are found in the NEC and NESC and provide that a communication system can effectively be grounded by attaching or bonding to the house ground with the electrical and other communication systems such as phone

networks. Bonding to the cold water pipe can be an option. However, this cannot occur outside and an inspection must be performed on the water pipe to ensure there is not a break in the electrical path to the electrical ground or the outside such as would be introduced by plastic or non-metallic pipes in the house (non-metallic pipes have become more prevalent in the past 25-30 years) or through some water softeners that use plastic piping and valves.

By far, the most significant issue we found during the driveout was that of non-existent, faulty or improperly grounded/bonded drops. We found 23 instances of missing, faulty or incorrectly installed bond/grounds at residences and businesses.

During our driveout of other systems we have found labels on some drops indicating that a ground was in place inside the residence and therefore not visible for outside inspections. It may well be some of the addresses we have noted have a bond/ground inside the building. These should always be labeled outside so inspectors are made aware of the bond/ground while doing an inspection.

In addition, we found 2 instances of loose ground wires or amplifiers that were not grounded in pedestals as is required by NESC Section 9.



613 Alpert Ct W- Proper bond - Bonding wire comes out of Comcast's box and attaches to the metal meter box with an approved clamp



2208 Antelope Rd – No ground/bonding wire coming out of Comcast's box to connect to power and phone grounds



2224 Kechter Rd – Bonded to outside water faucets or pipes

Pedestals that are damaged and/or are not secured properly – Pedestals that house cable television equipment such as amplifiers, splitters, taps and distribution and drop cables, should be secured to ensure the public cannot easily open the pedestal and thus have access to the equipment and cables. When there is power on the equipment, such as when an amplifier is within the pedestal or when the cable plant downstream of the pedestal has an amplifier needing power, failure to secure the pedestal is a violation of the NESC Code Section 380. When power is not present within a pedestal, good engineering practice would still provide that the pedestal be secured to minimize theft of service, vandalism to the plant and drops within the pedestal and therefore reduce the likelihood of outages due to unauthorized access to the equipment within the pedestal.

We found 27 instances of pedestals that were smashed or cracked, open or unsecured (no locking mechanism in place).



114 S Sherwood St - Pedestal is not set properly, pedestal is too small to fit contents correctly



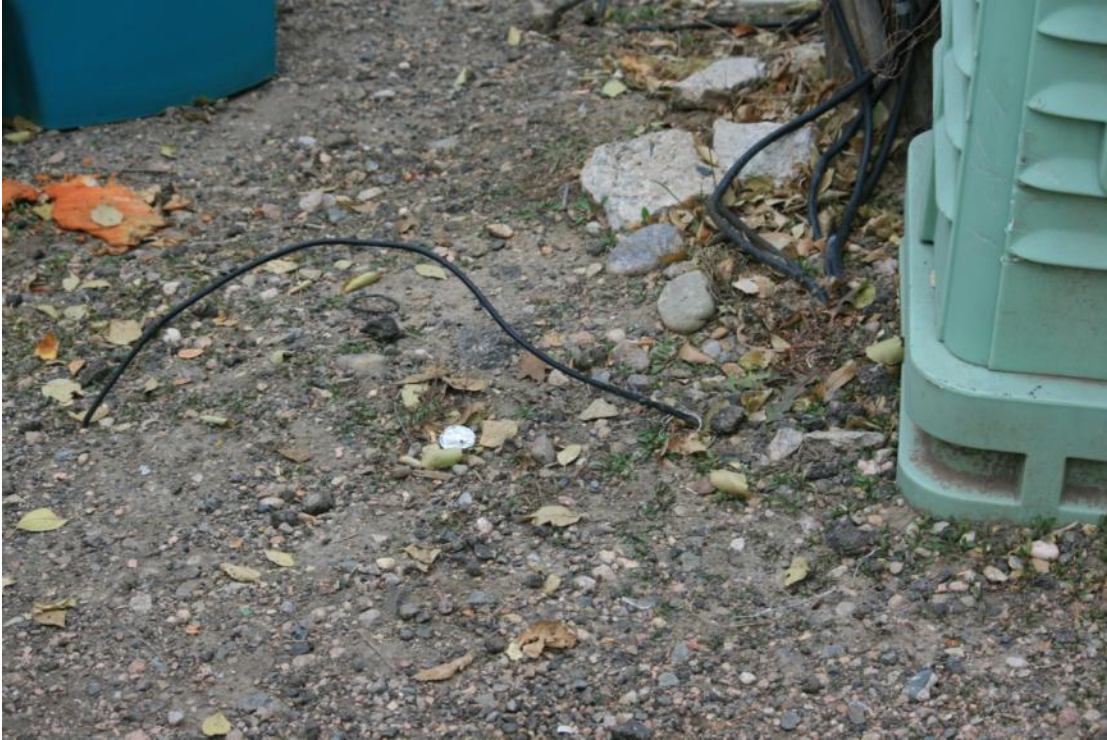
916 Laporte Avenue - Open pedestal, pedestal cannot be secured without cleaning up drops first

Underground drop cables exposed above ground – When an underground drop is first put into service, often times it is not immediately buried. Prior to burying the drop, other utilities must locate their facilities and a crew must be engaged to perform the task of burying the drop. In addition, once the ground has frozen for the winter, drop burying ceases until the spring thaw. These delays in burying drops are understandable. However, there appears to be a number of drops that are not completely or even partially buried in the City.

Having drops lying above ground creates a tripping hazard for people walking in the area. In addition, if the drop is caught on a person's leg or is tangled in a lawnmower or snow thrower, the customer fed by the drop will likely lose service until the drop is repaired. Furthermore, where a drop is exposed in an area that gets foot machine traffic the drop will likely fail over time as the cable becomes crushed. We found 6 instances of drops that were not buried or partially exposed as part of the sample and 2 drops that are not completely buried outside of the random sample.



517 Trilby Rd – Drop exposed above ground near the pedestal and up to the building



526A W Myrtle St – Drop partially exposed above ground – drop is a trip hazard

Cable TV drops not properly attached to poles – Cable drops that are not properly attached to poles create aesthetic problems as the drops are hanging away from the pole, in some cases several feet, but more importantly these drops can create a tripping or entanglement hazard to the general public as they come in contact with the cables. Furthermore, these cables often times are in what is referred to as the climbing area or climbing space of the pole. This area is to remain clear in order to provide a safe area of the pole for cable TV and other technicians to climb up to equipment fastened to the pole. Having this clear area on the pole is a safety concern and also a performance issue as someone climbing the pole can become entangled in the cables causing them to fall and/or causing them to damage the drop. Although there is a small amount of aerial plant in the City, we found 3 instances of drops that were not properly attached to poles.



918 Sycamore St – Drop not properly attached to pole – hangs out from pole creating a tripping problem for workers climbing the pole and an entanglement potential for people walking in the area

There are other, less frequent violations of codes that are listed and described in Attachment D of this Report as well as the issues found that are outside of the 151 random addresses. It is important for the City to require regular system inspections by Comcast and timely repair of issues and code violations that are found.

Projection of Overall System Problems

Issues with drops as they leave the pole or pedestal up to the side of the residence or business – During the driveout and inspection of the City at the 151 randomly chosen

addresses, CBG found a total of 33 issues or Code violations related to the drop from where it leaves the pole or pedestal up to and including the side of the house. These issues are explained above and listed in Attachment D to this Report. Based on statistical probability, we estimate that there are between 10,085 to 18,976 issues or code violations relating to drops Citywide. Specifically:

- 33 problems found from the building up to the pedestals or poles serving one of the 151 random sample addresses, divided by 151 locations inspected, equates to 21.9% of all addresses having a drop related problem.
- Taken across the entire City, this equates to 21.9% times 66,351 addresses, equals 14,530 addresses Citywide with a drop related problem.
- Applying the margin of error, this results in 15.2% to 28.6% of all addresses with a drop related problem or 10,085 to 18,976 drop related problems Citywide.

Issues at the pole or pedestal – During our driveout inspection at the 151 randomly selected addresses in the City, CBG documented issues or code violations at 32 poles or pedestals at the sample addresses. These issues are explained above and listed in Attachment D to this Report. We estimate that there are between 1,194 to 10,085 issues or code violations at a pole or pedestal Citywide.

- 32 problems found at pedestals (underground) or poles (aerial) serving one of the 151 random sample addresses, divided by 151 locations inspected equates to 21.2%, if all addresses had their own pedestal or pole.
- Since we estimate that each pedestal or pole serves 2.5 addresses, we take 21.2% divided by 2.5 or 8.5% of the pedestals or poles have an issue or code violation.
- Taken across the entire City, this equates to 8.5% times 66,351 addresses equals 5,640 pedestals or poles Citywide with an issue or code violation.
- Applying the margin of error, this results in 1.8% to 15.2% of all pedestals and poles with an issue or code violation, or 1,194 to 10,085 issues or code violations at poles or pedestals Citywide.

The City should require Comcast to provide a detailed inspection, repair and maintenance plan which addresses these and all issues and code violations in the City service area. Specific issues that should initially and then be regularly inspected for include, but are certainly not limited, to:

- Drops properly buried in a timely manner (all the way from the pedestal to the home or business)
- Ground rods sticking out of the ground
- Hardline cables properly attached to the pole and protected
- Down guys and guys over roads properly installed and tensioned
- Power supplies locked
- Apartment boxes secured, neat and bonded to power and phone
- Pedestals in good condition, properly placed and secure from unauthorized entry, replace faulty doors, smashed covers, etc.
- Proper grounding and bonding at the poles and pedestals
- Proper grounding and bonding at the residence or business
- Proper clearances between facilities and providers on poles and from the pole to the residence
- Proper clearance of aerial cables to the ground
- Drops properly attached to poles

Documentation of these inspections and repairs needs to be provided to the City on a regular basis to ensure that all the problems detailed herein, and projected Citywide, have been resolved; perhaps quarterly.

Cable TV Subscriber Network Evaluation Conclusions and Recommendations

***System Design and Bandwidth** - As subscribers' desires and needs increase over time, the system's bandwidth or capacity may need to increase. It is difficult to predict what bandwidth needs will be in just a few years, let alone over the course of a 10 year or longer franchise term. For instance, DOCSIS cable modem technology now allows the operator to expand available Internet access speeds and throughputs by utilizing additional channels or space on the system. Although this improves subscribers' Internet speeds, which is a positive outcome, it also decreases the bandwidth for Cable TV services. Furthermore, new services will come along and the number of high definition, 4K high definition and 3DTV or other advanced services or channels will continue to increase as these become even more the preferred, if not demanded, means of TV watching.*

As previously mentioned, possible methods of minimizing the impact of additional bandwidth needs include upgrading the system to 1,000 MHz, upgrading the system to FTTP architecture and deployment of SDV. These and other options should be reviewed and considered as part of franchise renewal, at a minimum during a required Franchise triennial technical review.

FCC Testing Documentation – The City should require Comcast to test the system to show compliance with FCC §47CFR76.640 at a minimum of 5 locations in the City. Comcast should be required to document the results of this testing and provide copies to the City in place of their previously regularly scheduled FCC POP testing which is no longer required.

Picture Quality – The City should review our findings related to SD channel picture quality with Comcast and perform additional subjective testing, on a regular basis, in cooperation with Comcast to further understand what issues subscribers may have. This testing can be done with Comcast converters and a television with a screen size of at least 40 inches.

Regular Inspection of Infrastructure - Comcast must be required to maintain its system infrastructure in a safe manner and ensure they protect the public as well as technicians and others that must enter the areas around cable TV infrastructure. Comcast should first respond to and resolve all the problems noted in Attachment D. Then the City should require a maintenance program to be implemented to address the other similar issues that exist in the City, based on statistical probability. This program should also be designed to continually inspect all cable TV infrastructure from the headend locations, up to and including at the subscribers' residences or business locations. Documentation should be provided to the City detailing problems found, dates found and repaired and the ultimate resolution. These inspections and repairs should include, but not be limited to:

- Drops properly attached to poles
- Drops properly buried in a timely manner (all the way from the pedestal to the home or business)
- Ground rods properly buried
- Hardline cables properly attached to the pole and protected
- Down guys and guys over roads properly installed and tensioned
- Power supplies locked
- Apartment boxes secured, neat and bonded to power and phone
- Pedestals in good condition, replace faulty doors, smashed covers, etc.
- Proper grounding and bonding at the poles and pedestals
- Proper grounding at the residence or business
- Proper clearances between facilities and providers on poles
- Proper clearance of aerial cables to the ground

In addition, the City should perform spot checks on a regular basis to determine if the system is being maintained as required by both the NESC and NEC and as required in the current and future franchises.

E: Financial audit of the franchise's financial requirements.

REPORT TO
TELECOMMUNICATIONS RESEARCH CORPORATION
RE: CITY OF FORT COLLINS, CO
(Comcast of California/Colorado, LLC)
AND
REPORT ON AGREED-UPON PROCEDURES
CABLE TELEVISION FRANCHISE FEES

January 1, 2012 – December 31, 2012

Karrison LLC
1775 Legacy Circle
Naperville, Illinois 60563
630.505.3920

Contact: Louis G. Karrison, CPA
louk@tsrcpa.com

INTRODUCTION

Karrison LLC ("KLLC") was engaged by Telecommunications Research Corporation to perform an analysis of the cable franchise fees paid to the City of Fort Collins, CO ("City") by Comcast of California/Colorado, LLC ("CC") for the one-year period from January 1, 2012 through December 31, 2012.

KLLC was not engaged to, and did not, perform an audit of CC for the purpose of providing an opinion on the compliance of CC with the financial terms of the cable franchise agreement in force for the period as defined. Instead, it performed agreed-upon procedures to test compliance. Accordingly, KLLC does not express an opinion. The independent accountant's report on applying agreed-upon procedures is contained in a later section of this report. Certain of the agreed-upon procedures (1, 3, 4, 5, and 6) were applied to a three-month or one-month sample of transactions. Using sampling results in detecting noncompliance throughout the period under review allows for a more efficient methodology to be employed.

A documentation request was sent to the cable operator (see attachment), and such documentation was supplied. KLLC was on-site at the cable operator's premises in October 2013 to perform the procedures which resulted in the determinations cited in this report.

SCOPE OF WORK

The analysis of franchise fees was performed solely to assist the City in evaluating the degree of compliance by the cable operator with the financial terms of the cable franchise agreement, as summarized by the scope of work shown below. Matters listed in the scope of work were embodied in a series of procedures performed and more fully discussed in the agreed-upon procedures section of this report (see cross-references).

1. Making a determination of all eligible revenue sources for the City based upon the City's definition of "gross revenues." (Procedure 1)
2. Reviewing the cable operator's supporting documentation for franchise fee revenue to the City, including franchise fee verification reports and other revenue reports. (Procedures 1, 2, 3, 4, 5, 6)
3. Identifying each revenue source that Comcast of California/Colorado, LLC has included in the definition of "gross revenues" for the City and determining whether the cable operator is applying the franchise fee to all eligible revenue sources for the time period under review. This includes identifying any revenue sources to which the City is entitled, but which the cable operator did not include in calculating "gross revenues." (Procedures 1, 3, 4, 7)
4. Ensuring that all eligible revenues recorded in the cable operator's financial records are accurately included in the franchise fee payments in accordance with the City's franchise agreement. (Procedures 1, 3, 4, 5, 6)

5. Reviewing certain special revenue sources, such as “trouble call” fees, video tier downgrade fees, franchise fee-on-franchise fees, etc. to determine proper inclusion in the determination of franchise fees for the time period under review. (Procedure 1)
6. Determining whether non-subscriber revenues such as leased access revenues have been properly calculated and properly apportioned to the City. (Procedure 5)
7. Reperforming calculations of the cable operator for determining franchise fee revenues for the time period under review. These calculations include, but are not limited to, figures underlying the amounts reported for each revenue source and calculations on the specific items comprising general franchise fee categories such as “miscellaneous revenues” and “installation revenues” (which include installation, disconnection, reconnection, and relocation fees). (Procedures 1, 2)
8. Ascertaining trends of various revenue categories to spot discrepancies or inconsistencies in the reporting of revenues over time and making inquiries of the cable operator to explain such discrepancies or inconsistencies. (Procedure 1)
9. Determining whether there are any underpayments of franchise fees to the City with respect to the cable operator, the amount of underpayment, and whether any penalties in addition to the underpayment apply in accordance with the City’s franchise agreement and/or ordinances. (Procedures 1, 3, 5)
10. Determine if bundling discounts have been allocated proportionately among cable and other services. (Procedure 8)

FRANCHISE AGREEMENT PROVISIONS

KLLC reviewed the franchise agreement for sections pertinent to the project, and they are as follows.

Gross Revenues

Section 1.27 states "Gross Revenues" means all revenue derived by the grantee as determined in accordance with GAAP from the operation of the Grantee's Cable System to provide Cable Services. Gross Revenues include, by way of illustration and not limitation, monthly fees charged Subscribers for any Cable Service; installation, disconnection, reconnection and change-in-service fees; Leased Access Channel fees; Cable System equipment rental fees; all Cable Service lease payments from the Cable System; late fees and administrative fees; fees, payments or other consideration received by the Grantee from programmers for carriage of programming on the Cable System; advertising revenues (net of commissions paid to any entity that is not an Affiliate of Grantee); the fair market value of consideration received by the Grantee for use of the Cable System to provide Cable Service; revenues from program guides; additional outlet fees; Franchise Fees; revenue from the sale or carriage of other Cable Services; and revenue

from home shopping, bank-at-home Channels and other revenue-sharing arrangements. Gross Revenues shall include revenue received by the Grantee or any entity other than the Grantee where necessary to prevent evasion or avoidance of the obligation under this Franchise to pay the Franchise Fees. Gross Revenues shall not include (i) to the extent consistent with GAAP, Bad Debt; provided, however, that all or part of any such Bad Debt that is written off but subsequently collected shall be included in Gross Revenues in the period collected; (ii) the

Capital Contributions specified in subsections 9.1 and 9.2; or (iii) any taxes on services furnished by the Grantee which are imposed directly on any Subscriber or user by the State, City or other governmental unit and which are collected by the Grantee on behalf of said governmental unit. The Franchise Fee is not such a tax.

The parties intend for the definition of Gross Revenues to be as inclusive as possible consistent with the existing applicable law. If there is a change in federal law subsequent to the Effective Date of this Franchise, such change shall not impact this Gross Revenues definition unless the change specifically preempts the affected portion of the definition above.

Franchise Fee Payment and Financial Controls (summary)

Section 3.1 - Franchise Fee percentage is 5%.

Section 3.2 – Payments are to be made quarterly.

Section 3.3 – Acceptance of payment shall not be construed as an acknowledgment that the amount paid is correct.

Section 3.4 – Each payment shall be accompanied by a Quarterly Franchise Fee Report.

Section 3.5 – Grantee shall file an Annual Franchise Fee Report stating the total amount of Gross Revenues.

Section 3.6 – The City shall have the right to inspect the books and records of the Grantee and perform an audit.

Section 3.7 – Interest on late payments accrues at the prime rate.

Reports and Records (summary)

Section 7.1 – City has right to inspect Grantee's books and records.

TOTAL AMOUNT DUE TO THE CITY

Based upon performance of the activities describe previously in the Scope of Work, and as detailed in the agreed-upon procedures section of this report, the following amounts are due to the City for the period January1, 2012 through December 31, 2012:

Franchise Fees on Ad Agency Commissions	\$ 23,243
Franchise Fees on Carriage of Programming	1,535
Total	\$ 24,778

Additional amounts may be due to the City for prior years as described above.

RECOMMENDATIONS

KLLC recommends that the City pursue payment of the underpayment of franchise fees noted above. Additionally, KLLC recommends the following:

1. Gross Revenues definition – if possible, the City should consider removing any reference to generally accepted accounting principles (“GAAP”) so as to make certain that the definition of gross revenues is purely a contractual definition, and not subject to changes and interpretations of accounting rules from time to time.
2. Audit Period Limitation – if possible, the City should consider changing Section 3.6 which limits the audit period to three years to five years.
3. Bundled Discounts – bundling of services has become a common practice. Any discounts should be applied proportionately to each service offering and not allocated to any one service. The City should consider addressing this issue in the next franchise agreement.

INDEPENDENT ACCOUNTANT'S REPORT
ON APPLYING AGREED-UPON PROCEDURES

Telecommunications Research Corporation
810 NC Highway 61 South
Whitsett, NC 27377

RE: City of Fort Collins, CO

We have performed the procedures enumerated below, which were agreed to by Telecommunications Research Corporation and the City of Fort Collins, CO, on revenue/receipt transactions reported by Comcast of California/Colorado, LLC to the City of Fort Collins, CO, for the period January 1, 2012 to December 31, 2012, solely to assist you in your evaluation of the degree of compliance by Comcast of California/Colorado, LLC in accordance with the franchise fee terms of the cable franchise agreement. Comcast of California/Colorado, LLC is responsible for reporting in compliance with the terms of the cable franchise agreement. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of the procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The "franchising authority" is defined as the City of Fort Collins, CO, "other franchising authorities" is defined as all additional franchising authorities who are included in the cable operator's systems and are pooled for purposes of allocating nonsubscriber revenues, and "cable operator" is defined as Comcast of California/Colorado, LLC.

1. Compare subscriber fees totals, including franchise fees, installation/reconnection charges, pay-per-view, late fees, remote controls, guides, trouble calls, video tier downgrade fees, relocation fees, etc., from billings/receipts reports to franchise fee worksheets for three months during 2012.

To perform this procedure we requested that the cable operator provide its monthly billing reports, which it did. Those reports contain information detailing how much was billed to subscribers for each type of service taken for a particular month. In effect they summarize, by type of service, the amounts charged to the subscribers and reflected on individual subscriber accounts. See procedure #7 for more information regarding individual subscriber accounts. Monthly reports for the Fort Collins franchise are separate from other franchises' reports. These reports are structured so that billings for a particular month are associated with the revenues earned for that time period.

The cable operator prepares "franchise fee worksheets." These worksheets record the amounts billed by type of service. Amounts from the billing reports are entered on the

franchise fee worksheets. Each month's revenues in a calendar quarter are listed and totaled. Total revenues by type of service for the calendar quarter are calculated.

No exceptions noted.

2. Compare all franchise fee worksheets obtained from the cable operator with franchise fee payment schedules submitted to the franchising authority for one year – 2012.

The cable operator submits a payment schedule to the City that summarizes the gross revenues for the quarter and any allowable deductions, and details the computation of franchise fees due. The amounts in the schedules were compared to the franchise fee worksheets. Reperformance of the calculations was done.

No exceptions noted.

3. Test the recording, allocating, and reporting of advertising revenues (and any deductions such as agency fees) among the local franchising authority and other franchising authorities, for three months during 2012.

We reviewed the cable operator's advertising revenues accounting spreadsheets and compared amounts to the amounts reported to the City. During that review we noted that the cable operator excluded from Gross Revenues the amount of advertising agency commissions it incurred in the production of advertising revenues. The cable operator informed us that it is company policy exclude such amounts because they are not received by the company.

The cable operator has not included in reported gross advertising revenues amounts related to advertising agency commissions. Such commissions occur when advertising agencies are involved in the placing of ads, collect the gross advertising revenues from the advertisers on behalf of the cable operator, and remit to the cable operator the gross advertising revenues less their commissions, which are generally based upon an agreed percentage of the gross advertising revenues charged to the advertisers. The advertising agencies function as the agents of the cable operator, and they substitute for the cable operator's own ad sales force in the process of selling ads. As the cable operator cannot and does not exclude from gross advertising revenues commissions (and other compensation) earned by its ad sales employees, it should not exclude commissions earned by the advertising agencies. To do so would result in the cable operator being able to avoid paying franchise fees on gross revenues by structuring its ad sales transactions using advertising agencies in lieu of its own sales force. Gross advertising revenues are the same whether generated by company employees or advertising agencies, and whether received directly by the cable operator or constructively by passing through an intermediary (agent).

The total commissions amount was allocated to the City in proportion to the ratio of its subscribers compared to total subscribers in the advertising market, and then multiplied

by the franchise fee percentage. The City's allocation of those commissions results in additional franchise fees due of \$23,243.

4. Test the reporting of bad debts, refunds, and NSF checks on the franchise fee payment schedules by comparing amounts reported with billing adjustment reports for three months during 2012.

The cable operator incurs bad debts, makes refunds of previously reported revenues, and receives NSF checks. The cable operator also has bad debt recoveries. Bad debts (net of recoveries) are a component of gross revenues.

No exceptions noted.

5. Review general ledger revenue accounts and select items with a scope over \$500 for testing by comparing general ledger entries with detail supporting documentation for three months during 2012.

Nonsubscriber revenues are not reflected in the cable operator's subscriber billing system. Such revenues are recorded in the general ledger separately, and if applicable to the City's gross revenue definition are to be added to the amount of gross revenues from other sources.

The cable operator recorded revenues related to the carriage of programming; such revenues were not reported as part of gross revenues. The total programming carriage revenue was allocated to the City based upon the amount of City subscribers compared to total subscribers, and then multiplied by the franchise fee percentage. The City's allocation of those revenues results in additional franchise fees due of \$1,535.

6. Review general ledger expense accounts for credits which may be revenue items for items with a scope over \$500 for testing by comparing general ledger entries with detail supporting documentation for three months during 2012.

Cable operators generally have receipts of cash or other consideration which may or may not be considered as revenues under the City's definition of gross revenues. Amounts that are refunds of expenses, for example, would not be considered revenues.

No exceptions noted.

7. Test billings and collections for ten randomly-selected, specific customer accounts for services provided and amounts billed, by comparing billings/receipts reports to subscriber account ledgers for one month during 2012.

The amounts that are billed to individual subscribers are reflected on the subscribers' bills and in their individual ledger accounts contained in the cable operator's billing system. Such amounts are "rolled-up" in the billing system to various summary reports that are used to calculate and report gross subscriber revenues.

8. Test the application of discounts to five subscribers' bills when the subscribers choose to have telephony and data services in addition to cable services.

Discounts are given to cable subscribers who order non-cable services as part of a "bundle" that is offered by the cable operator. The discounts from the stand-alone prices should be applied to each service in proportion to the relative stand-alone prices, and not applied to a single service or disproportionately among the services.

No exceptions noted.

We were not engaged to, and did not conduct, an examination, the objective of which would be the expression of an opinion on any of the amounts or items referred to in this report. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of Telecommunications Research Corporation and the City of Fort Collins, CO and is not intended to be and should not be used by anyone other than these specified parties.

Naperville, Illinois
January 27, 2014

See Attachment E for all documentation requests related to this audit.

F: Current trends in cable television franchises.

Introduction

To assist in the needs assessment and evaluation of cable services and funding, the following information is provided to facilitate the analysis. It should be noted that franchises in other jurisdictions are the result of detailed negotiations involving a wide range of complex issues. Therefore, the outcome of any one category must be viewed in the context of an entire document. Also, communities vary greatly in terms of demographics, economic conditions and priorities.

In order to provide a wide spectrum for comparative purposes including a franchise entered into by a competitor of Comcast in Colorado -- CenturyLink, the following franchises have been selected for inclusion in this report. The requirements for facilities, equipment, dedicated return lines and I-Nets are often detailed in franchises. The dollar allocations among PEG Access participants are often determined by cities in a format which is not readily apparent from the text of franchises. However, the summaries herein provide useful information in the overall context of developing renewal positions.

Comcast's cable operations are headquartered in the Philadelphia area. Comcast serves in excess of 22,000,000 subscribers nationwide. The size of the communities served varies from small rural communities, to mid-size cities, to large metropolitan areas. Accordingly, the franchise requirements also vary widely depending upon the size of the respective subscriber base.

For purposes of this report, we have summarized various portions of several cable television franchises. As would be expected, there is a wide variation in franchise provisions dealing with subjects such as the franchise term, system upgrade requirements, PEG Access channel capacity requirements, funding and ancillary facilities.

El Paso County, Colorado

The cable television agreement between El Paso County, Colorado (“El Paso County”) and Qwest Broadband Services, Inc. d/b/a CenturyLink was entered into in June of 2012. It was a very detailed agreement which addressed a number of issues. It is important to note that CenturyLink is competing in El Paso County with both Comcast and Falcon Broadband.

The term of the agreement was for six years and could be extended for two additional terms of two years each, depending upon whether CenturyLink makes cable service available to 25% of the residential units in El Paso County by the end of year six and to 50% of the residential units in El Paso County by the end of year eight.

CenturyLink agreed to pay 5% of Gross Revenues as an Agreement Fee. Additionally, it agreed to pay a PEG Contribution for Capital Support for Access Fees at such time that the dominant incumbent wireline cable service provider did the same. CenturyLink’s payment would be based on a pro rata amount, given the number of its Subscribers in comparison to the number of Subscribers of the dominant incumbent wireline cable service provider. CenturyLink agreed to provide a Performance Bond, Insurance and Indemnification.

It is required to maintain a Customer Service Location within El Paso County and adhere to FCC Customer Service Standards. Complimentary cable service to El Paso County, Libraries and Schools is required, along with the provision of up to 70 set top boxes in total for all facilities. CenturyLink is to provide one Channel for Government and other access programming and one scrambled digital Channel.

Additionally, CenturyLink is to provide up to 25 hours of Standard Definition Programming for Government Access Video on Demand. It must provide reasonable technical assistance and maintain all necessary hardware and software to encode, transmit and/or transfer Government Access Programming from El Paso County to CenturyLink’s System. There is a requirement for one

of the PEG Channels to be provided in High Definition format so long as El Paso County delivers it in such format to CenturyLink. CenturyLink is to provide technical assistance and to take prompt corrective action when problems occur.

This agreement contains a trigger for an additional Access Channel, extensive Right-of-Way Use and Construction Requirements, Signal Quality and Status Monitoring Requirements and Technical Performance Requirements as well.

Service Extension Obligations, Standby Power and Emergency Alert Capability are also contained in the Agreement.

El Paso County received partial reimbursement from CenturyLink in connection with its costs in drafting and negotiating the Agreement.

Redmond, Washington

For comparative purposes, we are including information regarding a franchise which was entered into in June, 2013 between the City of Redmond ("Redmond") and two affiliates of Comcast. This franchise is for a term of 7 years.

It contains a Competitive Equity section as this was very important to both Redmond and Comcast. Basically, it provided that while Redmond reserved the right to grant additional franchises, Comcast wanted the material terms and conditions to be similar in any such new franchises. It was very important that the Competitive Equity Section was written in a very detailed manner so that it was clear that identical provisions and conditions were not required if additional franchises are granted. Language which is proposed by Comcast with respect to Competitive Equity issues contains several variations and the scope of it needs to be written in a manner which is fair and equitable to both Fort Collins and Comcast. Additionally, the subject of universal build-out requirements is a very sensitive one with Comcast. In Redmond, there was not a universal build-out requirement. Comcast was required to build-out where there was a density of 25 residences per 5280 cable-bearing strand feet of trunk or distribution cable.

Comcast pays 5% of Gross Revenues with a broad definition of Cable Services. The franchise contains detailed requirements for Indemnification, Insurance, a \$500,000 Performance Bond and a requirement for a \$50,000 Letter of Credit (if there is an uncured breach by Comcast of a material provision of the franchise or a pattern of repeated violations).

Comcast must adhere to Customer Service Standards which are embodied in the City Code. The separate City Code also addresses numerous compliance and performance related matters.

Complimentary Cable Service is to be provided for Basic Service to Redmond buildings, schools and libraries as well as currently served Conference Rooms, City Hall and the Public Safety Building.

Comcast provides two Channels for Government Access Programming; one Channel for Educational Access Programming and one Channel for Public Access Programming (if triggered as required in the Franchise). Redmond can require PEG Fees to support Access Capital Costs.

In this Franchise, there are detailed Right-of-Way use and Construction requirements as well as Undergrounding provisions. Comcast must also adhere to GIS Mapping and Route Mapping provisions for overlaying on Redmond's GIS Mapping System utilizing NAD 83 as the horizontal datum.

There are requirements for Technical Performance, Inspection of Construction, Cable System Performance Testing and Testing for up to 7 additional test points. In the event of default, there are several provisions which come into play.

Comcast is required to maintain, at a minimum, one bill payment location and one Customer Service Location conveniently located within Redmond City limits.

Comcast is required to keep PEG Channels on the lowest tier consistent with applicable law. Both Redmond and Comcast reserve their rights with respect to whether PEG Channels may be required to be kept on the lowest tier in the event there is effective competition as provided by law. Comcast is to use reasonable efforts to minimize the movement of Access Channel assignments. If Comcast is going to beta test or conduct a trial on a limited basis of a new technology, such trial or beta test is to be conducted within Redmond so long as it is technically feasible. Additionally, upon request of Redmond, Comcast once every 3 years at its expense shall conduct a statistically valid telephone survey of its customers.

Denver, Colorado

The City and County of Denver (“Denver”) is in the process of entering into a non-exclusive Cable Franchise Agreement with Mile Hi Cable Partners, LP. The definition of Gross Revenues is very broad and includes advertising revenues and commissions from home shopping channels. The nonexclusive Franchise is for a term of 10 years and was signed in January 2014.

The Franchise contains Competitive Equity language and includes materiality provisions. The City will receive 5% of Grantee’s Gross Revenues, as defined in the Franchise, on a quarterly basis.

The City reserves the right to audit Grantee’s records, including relevant data as it pertains to the allocation of revenue as it relates to cable services that are bundled with non-cable services.

The Franchise contains Indemnification and Insurance provisions. If there is an uncured breach by Grantee of a material provision of the Franchise or a pattern of repeated violations, then Grantee shall provide a letter of credit in the amount of \$100,000. The City can assess monetary damages against the Grantee for certain violations, subject to specified criteria.

Grantee shall comply with Customer Service Standards. The Grantee reserves the right to challenge any Customer Service Ordinance which it believes is inconsistent with its contractual rights under the Franchise.

The Grantee shall make available to the City 8 downstream channels for PEG Access use. Currently, there are 7 standard definition Access Channels in use. Going forward, Grantee shall provide 5 activated downstream channels for PEG use in SD digital format. Within 120 days of the effective date of the Franchise, the Grantee shall activate 1 HD Access Channel. Grantee shall also provide, upon receiving written notice, up to 2 additional activated downstream channels for PEG use in HD digital format, subject to certain specified criteria.

After the giving of 120 days written notice by the City, Grantee shall provide 5 hours of VOD capacity for PEG Access programming. Additional VOD hours may be requested by the City, subject to certain viewing criteria.

Support for PEG Access shall be at the rate of \$1.00 per month per residential subscriber for capital costs related to PEG Access or as may be permitted by applicable law. The PEG Fee is also subject to being increased or decreased.

The Grantee's cable system shall be equivalent to or exceed the technical characteristics of an HFC 750 MHz cable system and provide activated two-way capability. The system shall deliver no less than 110 channels of digital video programming. However, the Grantee reserves the right to use the bandwidth in the future for other uses based on market factors.

The Grantee shall provide, at no cost to the City, one outlet of Basic Service and Digital Starter Service to all City-owned and occupied buildings, schools and public libraries, subject to certain caveats.

Aurora, Colorado

In July, 2013, a Cable Franchise Agreement was approved by the City of Aurora, Colorado with Comcast of Colorado IX, LLC. The City will receive 5% of the Gross Revenues which are derived from the provision of cable services in the City. The City adopted a very broad definition of Gross Revenues (for example, including advertising and commissions from home shopping channels). The Franchise Fee payments are due quarterly. The Franchise contains extensive Competitive Equity language (including materiality concepts) and audit provisions (including the right to review relevant data related to the allocation of revenue as it relates to cable services that are bundled with non-cable services). Customer Service Standards are attached to the Franchise.

As required by federal law, the Franchise is nonexclusive. The Franchise is for a term of 10 years.

Grantee shall make available to the City 5 downstream PEG Channels. Within 120 days of the effective date of the Franchise, Comcast shall activate an Access Channel in HD. In addition, the City also has the opportunity to have a second PEG Channel programmed in HD, subject to specified criteria in the Franchise. Comcast agreed to work with the City so that the City could make available more of its own programming over a web-based Internet platform. Comcast also agreed to provide, at no cost to the City, a business class broadband connection, broadband service and hardware so that the City could provide web-based PEG content and, after written request by the City, up to \$25,000 for a video-on-demand server to facilitate web-based Access programming.

The PEG Access Fee in the City is 52 cents per residential subscriber per month to be used solely for capital costs related to PEG Access and web-based on-demand Access programming, or as permitted by applicable law.

The Franchise contains Indemnification and Insurance provisions. If there is an uncured breach of a material provision by Comcast or a pattern of repeated violations, then a Letter of Credit in the amount of \$100,000 from Comcast may be required by the City. The Franchise also contains monetary damages provisions.

Comcast's cable system must be equivalent to or exceed the technical characteristics of an HFC 750 MHz cable system and provide activated two-way capability. On or after 5 years from the Franchise's effective date, the City can conduct a technology assessment of the cable system.

The Franchise also provides that Comcast will provide, at no cost to the City, one outlet of Basic Service and Digital Starter Service to all City-owned and occupied buildings, schools and public libraries subject to certain parameters.