
EXECUTIVE SUMMARY



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CBG Communications, Inc. (CBG), in conjunction with its Project Team Partners, Dr. Constance Book, Ph.D. of Elon University and President of Telecommunications Research Corporation; Carson Hamlin, Video Engineer/Media Integrations Specialist; Cohen Law Group; and Issues & Answers, Telephone Research Firm, has conducted a cable-related Residential Needs and Interests Assessment, Public, Educational and Governmental (PEG) Access Needs Assessment, Institutional Network Needs Assessment and Cable System Technical Review concerning the Comcast Cable Television System serving the four franchise areas in the City of Philadelphia, Pennsylvania (City). This Needs Ascertainment, Review and related research has been conducted as part of cable franchise renewal proceedings with a local cable television provider, Comcast Cable (Comcast).

The full results of all the reviews and assessments through the end of 2014 are presented in the Report that follows. The Report provides information for the City regarding issues of significance to the residents and organizations in the Philadelphia franchise areas that are related to cable communications and, correspondingly, the ability of the cable system and Comcast to meet these demonstrated needs and interests. As additional information is received in 2015 during the course of the franchise renewal process, CBG anticipates issuing addenda to the report as needed.

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

- A telephone-based Residential Community survey on cable-related needs and interests, conducted with a random sampling of 800 franchise area residents. Of those interviewed, 400 were Comcast cable television subscribers and 400 were not. This sample size provides a margin of error of $\pm 3.4\%$. The information obtained provided statistically valid data on residents' needs, interests, attitudes and opinions related to Comcast cable television. Subject areas included, but were not limited to:¹
 - Respondents' familiarity and experiences with Comcast.
 - Reasons non-subscribers do not subscribe to Comcast cable service or stopped subscribing to Comcast.
 - Amount of the average monthly cable bill (all services and fees).
 - Type of cable package subscribed to by respondents.
 - Other services subscribed to with Comcast (telephone and Xfinity broadband).
 - General level of satisfaction with Comcast.
 - Suggestions on how to improve the services provided by Comcast.
 - Quality of specific service features provided by Comcast.

¹ See Section A, Residential Telephone Survey, pp. 12-13.

- List of specific channels with poor picture quality or poor audio quality.
 - Ratings of communication and installation experiences with Comcast, including telephone-based customer service provided by the company.
 - The number of cable outages and subscriber experiences with restoration of services.
 - Awareness and opinions of government, education and public access programming currently offered and future interest in local programming. Non-subscribers were also asked about their interest in receiving local access programming.
 - Quality of the picture and sound of local access programming and evaluation of the programming's informational and entertainment value.
 - Interest in receiving local access programming in HD and via the On Demand feature of the Comcast cable television system.
 - The presence of broadband in the home in Philadelphia and current levels of online activity.
 - Interest in interactive government services from the City.
- In a further effort to extend the opportunity to all residents to provide feedback concerning cable television needs and interests, an online version of the Residential Community Survey was launched after the telephone study was completed. This survey covered the same topics as the telephone survey. It was also made available in hard copy form in local libraries and at locations throughout the City for its KEYSPOt community Internet access initiative. Three thousand, two hundred eleven (3,211) Philadelphia residents responded to the online survey to share their cable television experience.²
 - Focused discussions and update discussions with Public Access Staff and the Board of Directors from PhillyCAM, the independent non-profit providing Public Access services to Philadelphia residents, as well as extensive document review and focused discussions, and an online survey of PhillyCAM members who utilize the video production facilities and equipment and provide programming for distribution over PhillyCAM's Public Access Channels.³

The online survey of PhillyCAM producers, programmers and facility users obtained a variety of information from 100 respondents about both current operations and needs for the future.⁴

Site visits and observation, evaluation and analysis of the facilities and equipment were also made by CBG and its Team Partners of the existing PhillyCAM production facility on Ranstead Street to review age, condition, use and functionality of the existing facilities and equipment provided.

² See Section A, p. 43 and Exhibit A.2.

³ See Section B, p. 77, and Exhibit B.1

⁴ See Section B, p. 77, and Exhibits B.2 and B.3.

- A focused discussion, interviews, and update discussions with City Governmental Access management and staff, as well as extensive document review and an online survey of government agency representatives and others that are familiar with, or who work with, the City's Cable TV Unit in the development of programming for the City's Governmental Access channels.⁵ The online survey, similar to that for PhillyCAM, obtained additional information about both current operations and needs for the future.⁶

Similar to the needs assessment tasks regarding PhillyCAM, CBG and its Team Partners also made site visits to multiple Cable TV Unit production locations to review and evaluate the City's Governmental Access operation and review, evaluate and analyze existing facilities and equipment concerning age, condition, use and functionality and needs for the future.

- Interviews with the School District of Philadelphia (SDP) and its PSTV Educational Access Channel management and staff concerning SDP's existing operation and needs for the future.⁷ Again, a site visit was made to review, evaluate and analyze age, condition, use and functionality of the existing facility, equipment and channel, and related needs for the future.
- Interviews with production and management staff for each of the four higher educational institutions that operate Educational Access Channels, including Temple University Television (TUTV), La Salle University Television (La Salle TV), Drexel University Television (DUTV) and Community College of Philadelphia Television (CCPTV) to assess channel capacity and utilization, and program content development and distribution. CBG also reviewed and analyzed a variety of documentation provided by the universities and college.
- Focused discussions and interviews with a variety of government agency representatives as well as OIT (Office of Innovation and Technology) officials and communications and networking staff related to development of an Institutional Network (I-Net).⁸ This included a work group discussion with City department Information Technology personnel and other City officials who provided their experiences and visions as to how the City's networking needs will evolve.
- A review of Cable System Technical and Operational information provided by Comcast.⁹
- A system plant (physical infrastructure) inspection using a random sample of City addresses, as well as a review of the headends and hubs in order to review compliance with Cable Franchise technical provisions, including compliance with codes such as the National Electrical Safety Code (NESC) and the National Electrical Code(NEC).

⁵ See Section B., p. 93 and Exhibit B.6.

⁶ See Section B., p. 94, and Exhibits B.7 and B.8.

⁷ See Section B, p. 104 and Exhibit B.10.

⁸ See Section C, p. 124. An Institutional Network (I-Net) is a separate part of the cable system developed for communications network uses by government institutions.

⁹ See Section D., p. 152.

The analysis of all the information obtained through the Needs Assessment and Review process enabled CBG and its Team Partners to focus on many elements related to a renewed cable franchise. From this analysis, CBG developed detailed Findings, along with Conclusions and Recommendations incorporated in the Report. The Key Findings, Conclusions and Recommendations for consideration by the City as it continues through the franchise renewal negotiation process are the following:

Residential Community Needs Assessment – Telephone Survey

- Philadelphia’s cable television subscribers reported levels of satisfaction one to eleven percent (1%-11%) lower than other Comcast franchise areas in selected markets where studies were completed in the last six years. Specifically, seventy-four percent (74%) of Comcast cable subscribers are satisfied overall with their cable service, leaving 26% that indicated they are dissatisfied. Those that rated cable service negatively indicated that the rating could be improved if rates were lowered (45%), if more programming choices were offered (12%) and if there were fewer outages and breaks in service (8%). This suggests that working to rein in the increasing cost for commercial cable services, developing more affordable packages, and addressing technical issues related to signal outages and other reception problems would help improve satisfaction levels.
- Thirty-six percent (36%) of non-Comcast cable television subscribers indicated that they had never subscribed to Comcast cable services. The primary reason cited was the cost of service (35%), followed by 21% who indicated they were satellite subscribers and another 15% who don’t watch or don’t have time to watch television. For those who once, but no longer, subscribe to Comcast, cost was also the primary reason for no longer subscribing (58%). This was followed by those who have billing issues/problems (7%), those who experienced service problems (5%) and those who experienced poor customer service (2%). This suggests that taking the same steps to improve subscriber satisfaction would also serve to attract those who have never or previously subscribed.
- While the majority of Comcast cable subscribers indicated they were satisfied overall with picture quality, problems were noted with both signal outages and picture clarity or reception. Specifically, lengthy cable signal outages for periods of greater than 24 hours were noted by 17% of subscribers. Nineteen percent (19%) of Comcast subscribers reported problems with picture clarity or reception, including 11% of those who indicated the problems were constant and 9% who indicated that they occurred every few days. A substantial number of those who had technical problems were also dissatisfied (36%) or were very dissatisfied (10%) with the response time to resolve the problem. Both technical difficulties and outages resulted in calls to Comcast, adding call volume and likely contributing to the problems with telephone response times described below. Improvements to technical operations to address the problems indicated would, again, improve subscriber satisfaction, as well as reduce call volume.
- Sixty-four percent (64%) called the Comcast Customer Service operation in the last year. The primary reason was related to billing questions (28%). Of these, 15% had received a busy signal when calling the company which is substantially greater than the 3% level specified by the FCC and Philadelphia’s Franchise Customer Service Standards

requirements. Additionally, 61% indicated that their call had not been answered within 30 seconds, including the time left on hold, which is also far greater than the tolerance allowed (10%) under the Franchise and FCC Customer Service Standards.

- More than one in three (34%) were dissatisfied (11% very dissatisfied) with Comcast's billing practices, of those who called Customer Service related to billing questions and issues (28%). Again, working to resolve the issues that are creating dissatisfaction with billing and billing-related calls would not only improve customer satisfaction, but would also likely reduce the call volume related to billing and help to address Comcast's non-compliance with FCC Customer Service Standards.
- Thirty-four percent (34%) of subscriber respondents indicated that they were dissatisfied (23%) or very dissatisfied (11%) with Comcast's communications related to rate and programming changes. Accordingly, Comcast should review and improve how changes in programming rates and services are communicated to Comcast cable subscribers and the means it uses to communicate these changes.

We recommend each of the above problem areas be a focus in franchise renewal negotiations to secure improvements responsive to the concerns reported in the Survey.

- A significant portion of responding subscribers who were aware of the local Access Channels (68%) reported regular viewership of Philadelphia's local Public, Educational and Governmental (PEG) Access Channels. Specifically, 14%-20% of such subscribers reported watching the Channels on a weekly basis, including 3%-6% who watched more than five (5) hours a week. These percentages are significant when considering that cable television's business model revolves around niche channels rather than mass appeal channels.
- Subscribers also indicated a strong level of importance that these local PEG Channels be available on the system. The wide majority (84%) thought that these Channels were important, including 34% who indicated that they were very important and 26% that indicated important, regardless of how often they watch these Channels.
- Those subscribers also indicated a strong willingness to support PEG Channels as part of their monthly payment. Specifically, 37% of respondents indicated a specific amount that they would be willing to pay monthly to support local Access programming, with the average amount being \$3.16 per month. Including those not willing to pay anything (46%) in the calculation, the average amount subscribers were willing to pay to support PEG channels was still high at \$1.41 per month.

A number of these themes were also echoed in the online non-scientific survey.

PEG Access Needs Assessment

- The present PEG Access Channels and related channel positions need to be preserved and their capacity expanded to carry the High Definition (HD) programming cable TV viewers now expect. This includes continued delivery of:
 - Four (4) channels for Philadelphia City Government, including one channel that focuses on public meetings and hearings of the Philadelphia City Council and other governmental bodies, one channel that focuses on information about City Government and the work of City departments, one closed circuit channel for internal use by the Police Department, and one closed circuit channel for internal use by the Fire Department. The first two Governmental Access Channels must also be in HD.
 - One Educational Access Channel for the School District of Philadelphia's (SDP) Public School TV channel (currently Channel 52) to continue PSTV's focus on School Reform Commission proceedings, communication of information to students and their families, activities and events in the schools, and programming produced by students, faculty and staff. This Channel should also be provided in HD upon full conversion of SDP's production and master control equipment to HD.
 - Five Public Access Channels for PhillyCAM. This includes the existing flagship Community Channel 66 as well as the Live Culture Channel scheduled for the second quarter of 2015 and the forthcoming Sustainability, Heritage and Youth Channels now in development. These channels should all be provided in HD.
 - Four (4) discrete channels for the existing programmers of Higher Educational Access: Temple University for TUTV; Drexel University for DUTV; Community College of Philadelphia for CCPTV; and La Salle University for La Salle TV. All four of these Higher Educational Access channels must be provided in HD.
- All of these channels must be provided in an SD version until the entire system is converted to HD so that every subscriber, regardless of their tier of cable service, will always be able to receive all of the Access Channels.
- Because time shifted viewing continues to increase, it will be necessary to ensure that enough cable-based video on demand capacity is available for PEG Access Channel programming.
- New, upgraded and replacement equipment for the Government, Educational and Public Access Channels must be provided consistent with the needs and interests demonstrated in the study. This includes:¹⁰

¹⁰ Equipment needs are projected over a 10 year timeframe; for a 15 year franchise term, the equipment projections increase by 50%. Facility projections do not increase for a 15 year term.

- PhillyCAM Public Access -- \$3,480,000 to facilitate Public Access programming produced in the PhillyCAM Media Center, as well as in the field through single camera and other portable and mobile remote operations.
- City of Philadelphia Governmental Access -- \$3,057,480 to produce programming in the Council Chambers, City Hall studio facilities and in offsite meeting and conference room locations by both portable and mobile remote operations.
- School District of Philadelphia K-12 Educational Access -- \$1,945,680 for new, upgraded and replacement equipment necessary to support video production at SDP's Central Facility (including the Board Room and SDP's Central Studio facilities) as well as in the schools throughout the District.
- Regarding Higher Educational Access -- The Higher Educational Access Channels operated by Temple, Drexel and La Salle are funded by their Universities and through grants and donations from foundations and other funders. Accordingly, we have not projected specific capital equipment or facility needs for these channels. The Community College of Philadelphia is in a different situation, however, and may require capital equipment and facility funding for a production studio which it does not now have.
- PEG Access Facility funding -- Three specific needs were determined for facility space development and potential redevelopment concerning the Philadelphia PEG Access Channels:
 - For Governmental Access -- \$840,000 is forecast to develop a larger studio space as well as new post production, office, storage and related space in City Hall.
 - For PhillyCAM -- Two facility space related needs are evident. First, \$525,000 is needed to remodel 2100 square feet to develop a full Youth production and post production space. Then, there is a significant possibility that PhillyCAM may need to move its operation in 2021 when its current lease expires. At that time, it will need an estimated \$2,500,000 to make leasehold improvements in another leased space encompassing 10,000 square feet for current and new operations developed between now and 2021.
- Taken together, over a ten year period this equates to a total of \$11,868,640 needed for PEG Access capital facilities and equipment.
- Currently PhillyCAM relies significantly on operating support that comes from the cable franchises, augmented by member fees, grants and donations. Projections indicate that in order to both continue to maintain its current level of operations, as well as increase its content development and distribution consistent with the needs assessed, PhillyCAM will need to increase operational funding to an average annual amount of \$1,467,013 over the 10 year projected time frame. Consistent with the existing franchise, such funding should continue to be provided as an operating contribution from the cable service providers.

- Similarly, Governmental Access Operating costs will increase as additional staff is hired to produce more programming to distribute over two discreetly branded channels. These costs are forecast to average \$612,510 annually over 10-years.
- Comcast subscribers in the Philadelphia area are currently providing \$0.26 per subscriber, per month to support public access channels only. Over a 10-year period, if subscribership holds steady, and all subscribers in all four franchise areas are factored in, the amount projected to be generated is approximately \$8,580,000. This falls substantially short of the projected cost to meet all PEG access needs described in the Report, which total \$32,662,870 over 10-years and require an increase in the amount of funding currently provided.
- This rise in funding, however, is only to a level consistent with or well below the support provided in other large jurisdictions around the country (ranging up to 2% of gross revenues, or approximately \$2.04 per subscriber, per month).

Institutional Network Needs Assessment

- The services and applications running on the City's data networks continue to increase in number, capabilities and users, as the City implements technology initiatives necessary for efficient and cost effective delivery of government services. The City's need for additional network capacity, both speed and circuits, is accordingly increasing at a rapid pace.
- Networks used by the City must be highly flexible, permitting quick and cost-effective addition of new locations served, quick and cost-effective capacity expansion, and to protect network resources, quick and inexpensive termination and reduction of services for locations no longer needed.
- The City has stringent requirements for network availability, and minimal tolerance for network outages. Network security is a high priority.
- City Information Technology budgets remain tight, notwithstanding the increasing demands of City Departments for applications and network capacity. This means that the City's network must be able to increase in capability, while continuing to be cost-effective.
- Based on all of the above, CBG recommends development of a new dark fiber optic network to meet the City's data transport needs, both now and into the future, with the City responsible for acquiring and maintaining the equipment necessary to activate the network. This dark fiber network should be provided as part of an Institutional Network. In CBG's opinion, only a stand-alone dark fiber network that is wholly under City control can fully meet the above City requirements. CBG estimates the cost to build a new, stand alone dark fiber network serving the City's 208 sites (encompassing 338 communications circuits) is approximately \$11.2 million, including building entry cost.
- This cost could be considerably lower if all or part of the dark fiber for the I-Net were provided by Comcast on its system, as separate fibers for the City in Comcast's sheath or otherwise dedicated to City use. Although CBG believes that only a stand-alone network

that is fully controlled by the City can fully meet City needs, CBG believes the City should consider such an I-Net on the Comcast system, as long as the fiber is dedicated to City use and City use survives termination of a renewed franchise for any reason.

- CBG evaluated the alternative of a “managed network services” arrangement, under which a provider furnishes data transport service on its infrastructure, which is used for multiple customers and is wholly under the provider’s control with respect to maintenance, network availability, security and flexibility in the addition or termination of locations. Given the City’s stringent requirements described above and detailed in the Report, it is CBG’s opinion that “managed services” will not meet the City’s network needs.

Cable System Technical Review

- CBG conducted a technical review of Comcast’s cable system that included document review, system physical plant (infrastructure) audit, driveout and inspection, facility tours, and discussions with Comcast staff to determine the condition of Comcast’s subscriber network in the four franchise areas.
- CBG inspected randomly selected addresses throughout the City to evaluate the compliance of Comcast’s cable television system with the National Electrical Safety Code (NESC) and National Electrical Code (NEC) as required by the current franchise. CBG found substantial maintenance and code compliance failures. Based on the random sample and using standard statistical methods, CBG projects that as many as 256,750 addresses City-wide have a service drop that violates the NESC or NEC, and that as many as 13,738 addresses City-wide have a pole or pedestal with an NESC or NEC code violation.
- Based on these projections, CBG recommends that the City require Comcast to develop and implement an inspection program and correct all code violations in the short term, under the current Franchise, and that the requirement for this program be included in a renewal franchise. The program should require regular inspection of the infrastructure and timely repairs with accurate documentation provided by Comcast to the City on a regular basis.
- The City should perform a triennial system design and bandwidth review. As subscribers’ desires and needs for cable services increase over time, and given the increased capacity demands on the system for non-cable services such as Internet access and commercial data transportation, the system’s capacity may need to be increased. Possible methods of minimizing the impact of additional bandwidth needs include upgrading the system to 1000 megahertz (1 gigahertz), upgrading the system to Fiber-To-The-Premises (FTTP) architecture and deployment of Switched Digital Video (SDV technology. These and other options should be reviewed and considered as part of franchise renewal, at a minimum during a required triennial technical review.
- The City should require Comcast to test the system on a regular basis, with documentation, to show compliance with FCC regulations. Tests should be performed at a minimum of eight (8) locations in the City. This testing should be required under a renewed franchise.

- The City should perform additional testing of picture quality. The City should review CBG's findings related to SD channel picture quality with Comcast and perform additional subjective testing on a regular basis in cooperation with Comcast.

The findings, conclusions and recommendations summarized above and fully detailed in the Report, provide a strong and sound basis for the City to go forward in the franchise renewal process and to ensure that the needs and interests of residents, organizations and other diverse communities of interest in the City of Philadelphia are met in any renewed franchise.