

SandyNet Master Plan

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1. Executive Summary

It is difficult to overstate SandyNet's excellence in the context of municipal ISPs, and ISPs in general. SandyNet provides superb customer service, fast and reliable speeds, and all at some of the lowest costs to customers in the country. SandyNet is an asset that any community in the US would covet, and is poised to strengthen the economic and quality of life of the Sandy Community for decades to come.

Under the surface, however, SandyNet is facing some challenges that are common to ISPs of its current size – challenges that this plan seeks to address. And it must first be said that these are not challenges to be afraid of, nor challenges that should be seen as indictments of SandyNet's management or trajectory until this point. These are solvable challenges that can be mitigated while still maintaining SandyNet's position as one of the most affordable ISPs in the nation delivering exceptional service to the community.

SandyNet has approximately 4,000 subscribers, and growing to 4,000+ subscribers is a challenging initial hurdle for small ISPs for two primary reasons.

First, it requires building a full management team (which is a significant expense) while the total customers are still relatively small. Adding customers from this point on will provide linear revenue growth, while only incurring incremental additional costs, because SandyNet will be able to spread its fixed operational costs over more subscribers.

Second, initial ISP growth often requires utilizing significant capital from outside sources (most often in the form of debt) rather than from internal revenues. ISPs then have to manage those debt service obligations at a more precarious scale. Once ISPs grow beyond 4,000 customers, revenues can increase more substantially as the ISPs leverage more scale. This in turn provides ISPs with more flexibility and cushion on their balance sheets.

SandyNet's current challenges are a particular manifestation of those commonly faced by similarly scaled ISPs. SandyNet has achieved its growth with a significantly leaner staffing model than peer ISPs – which has in turn allowed SandyNet to charge prices that are *significantly* lower than their competitors and peer ISPs. While the staffing shortcuts have enabled incredibly low prices, which in turn have generated sky-high penetration rates within the community, the current staffing levels are not sustainable. Instead, there is significant operational risk due to burnout, turnover, and lack of capability resiliency. At a time when hiring in telecom is perhaps the hardest it has ever been, turnover now could significantly impact network operations and therefore service quality.

In addition, the current pricing structure does not allow SandyNet to adequately address some longer term network asset and operational needs, such as fully accounting for asset depreciation, and building in some best-practices aspects of network resiliency (namely, a redundant telecom data center, known in the telecom industry as a central office).

While it is difficult, in general, for ISPs to persist for long periods of time at 2,000 or 3,000 subscribers, it is completely possible for an ISP to have a long-term, sustainable business around 4,000 subscribers – just not at the current rates SandyNet is offering. The staffing structure and the asset depreciation challenges are both critical enough that this plan strongly recommends that SandyNet raise its rates to account for these two foundational operational needs. This recommendation was not made lightly. A close review of SandyNet’s operations led to the clear conclusion that SandyNet’s rates are, essentially, artificially low, which is introducing unnecessary risks to the business.

We hope this plan serves as a roadmap for SandyNet through this inflection point in their size, and conveys simultaneously that SandyNet is not in an unstable or dangerous position currently. Instead, we recommend that significant changes and growth should be pursued to make the organization more resilient, ease staffing burdens, and protect SandyNet for the decades to come.

A summary of recommendations in this plan are as follows:

1. Better account for asset depreciation of network assets by assuming a seven year replacement cycle on network electronics, and 30 year replacement cycle on fiber. Doing so suggests that SandyNet should be setting aside approximately \$550,000/year.

2. Strengthen the relationship between SandyNet and its advisory board by formalizing reporting structures, goals, and success metrics, to allow the board to provide more rigorous strategic guidance. A stronger relationship will provide more value and guidance to SandyNet leadership through this process of maturing its operations, staff, accounting, and strategy.

3. Mitigate risks of staff burnout, turnover, and lack of redundancy by increasing staff capacity. Section four of this plan provides specific recommendations for staff to add, roles to differentiate, and that SandyNet establishes stronger recruiting pipelines with regional training programs.

4. Adjust SandyNet’s rates to increase the Average Revenue Per User (ARPU) by \$12/month. This is the threshold estimated to be needed to properly mitigate the critical risks identified in this report.

5. Consider consolidating debt to a 30 year revenue bond, which is standard for municipal ISPs. Given SandyNet is a stable municipal utility, debt consolidation into a debt vehicle that aligns with the life of fiber and minimizes monthly payments could be a strategic way to give the ISP more cushion in year to year finances and enable organizational investments such as updated facilities for network redundancy and updated office space

6. Pursue customer growth in a structured way outside of Sandy in partnership with CBX or by building using SandyNet backed construction. Scaling beyond 4,000 customers would allow the ISP to spread its fixed costs over more subscribers, strengthen its financial position, and bring more resources into the City of Sandy. This plan provides an analysis of both of these growth philosophies, and considerations and strategies that should be employed while pursuing each.

2. SandyNet's finances are stable but the enterprise does not generate adequate surplus for long term needs after accounting for debt service payments

Because the recommendations throughout this plan have to be made within the context of the financial health of the SandyNet, this strategic plan begins with a quick summary of the current state of the health of the enterprise.

SandyNet is currently in an acceptable financial position for the near term, generating a modest surplus after current operational expenses and debt service payments.

SandyNet's budgeted operational costs of approximately \$1.8M/year are very lean – particularly due to the smaller staff size compared to similar ISPs. (See section 4 for a deeper analysis of SandyNet staffing).

On the debt side, SandyNet's debt is spread across a revenue bond acquired in 2015 and interdepartmental loans from the City. The enterprise is approximately halfway through repayment of the 20 year, \$7.5M revenue bond, with annual payments slated to be approximately \$620,000-\$690,000 for the remainder of the term. SandyNet's wastewater interfund loan has been fully paid off, and it has retired a little more than half of a transit interfund loan, with a remaining balance of slightly over \$200,000.

On the revenue front, SandyNet has some of the lowest rates of broadband in the country, which has created a loyal base of customers in the city of Sandy, where penetration rates are around 80%. Penetration rates for SandyNet are exceptionally high and likely among the highest for any ISP in the country.

Revenue growth is projected to be modest, as it is unlikely that significantly more customers will subscribe to the network given penetration rates are already so high. Some growth is being achieved through SandyNet's partnership with Clackamas Broadband Exchange (CBX), but this partnership does not currently cover a significant number of new homes and businesses.

All told, SandyNet's revenue covers current operational costs and debt service, but does not leave significant if any surplus after payments. This is a stable position from which to operate for the near term, but acting on the strategic changes recommended in this plan – which are essential to ensure the long-term strength and health of the enterprise – will require making adjustments to the rate structure and pursuing additional customer growth.

In addition to exploring options to increase revenue described in later sections, SandyNet may wish to reduce debt pressure and free additional funds in the short term by considering options to refinancing its bond from a 20 year term to a 30 year term. This would allow the enterprise to take a longer term financial view, as is typical for a municipal ISP, and leverage stability and relative predictability of the

revenue bond system. SandyNet should engage with the City's finance department and its advisory board to discuss refinancing options.

3. SandyNet should more formally account for network depreciation costs – and budget for a telecom data center upgrade

SandyNet should allocate funds to ensure network resiliency. In particular, SandyNet should prioritize covering expenses related to depreciation, as well as possible future expenditures to harden the network and add redundant facilities.

3.1 SandyNet must account for asset depreciation to ensure continued high quality service

To ensure that SandyNet can continue to provide high quality service, it needs to plan and account for asset depreciation. Depreciation is the gradual decrease in value of network infrastructure and equipment over time due to wear and technological obsolescence. Proper depreciation planning is foundational to best practice ISP operations, and ensures that funds are available to replace aging equipment and maintain service quality. SandNet leadership previously planned and budgeted for equipment replacement costs, but funding was allocated in favor of other operational priorities, such as network expansion.

Going forward, SandyNet should annually funnel revenue into a depreciation fund to cover both its network electronics and fiber optics assets. It should conservatively assume a seven-year service life for network electronics, which is industry standard, though the actual service life may be longer for some of the components. The total estimated cost of electronics in SandyNet's network is \$2.7M. Therefore, using a straight line depreciation schedule, SandyNet should set aside approximately \$386,000 annually for electronics depreciation.

Fiber optic cable is conservatively rated by manufacturers to have a 20 year service life, but in practice lasts much longer. ISPs often assume a depreciation cycle of 30 years on fiber assets (and fiber made within the last 10 years may last more than 30 years). Replacement costs for fiber will be variable based on when the construction occurs, but ISPs can use a rough estimate of \$60,000 per mile for planning purposes. SandyNet's network consists of about 80 miles of fiber, making the total estimated value of fiber assets (including construction costs) approximately \$4.8M. Therefore SandyNet should set aside approximately \$160,000 replacement annually in the depreciation fund.

SandyNet's total yearly target of approximately \$546,000 for their depreciation fund must also scale proportionally with any expansion or upgrades that add to the value of the network.

3.2 SandyNet should consider adding another telecom data center to increase resilience

Establishing a new, redundant, telecom data center (referred to as a central office, or CO, in the telecom industry) for network equipment would increase network resiliency, and should be understood as another demand for additional operational revenue.

Stakeholders interviewed for this plan repeatedly noted that the current location of SandyNet's central office is suboptimal from a network security standpoint and presents a vulnerability as a single point of failure.

Of course, building another central office would be a considerable expense. SandyNet could start planning with a baseline budget of \$500,000 for the facility based on industry averages, not including site acquisition costs. However, network resiliency and security is a major area of concern for ISPs, and mature ISPs all endeavor to have more resiliency by establishing a second CO. Additionally, as SandyNet continues to grow, updated or expanded office space and facilities for personnel will likely become more desirable. If SandyNet chooses to prioritize exploring the feasibility of a new CO, it should consider the possibility of combining the construction with other planned City developments to capture construction efficiencies and lower overall costs.

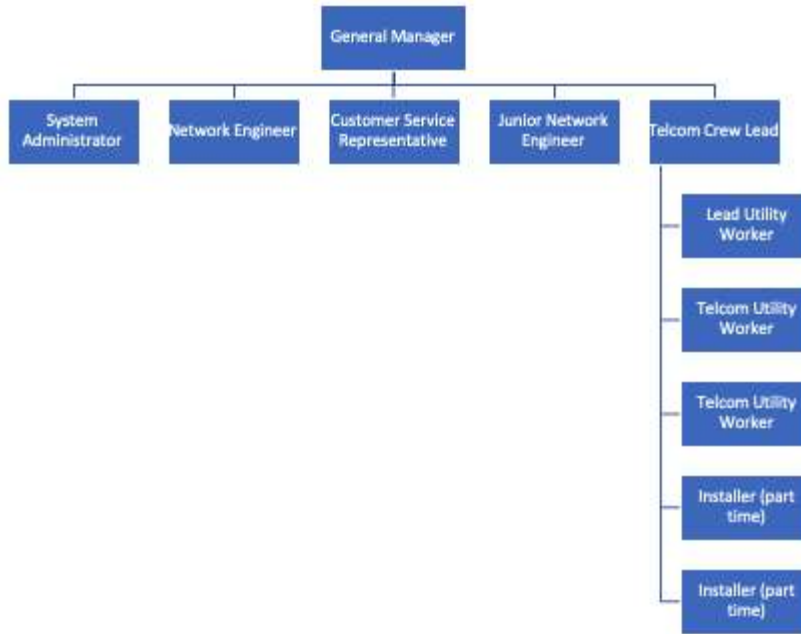
4. SandyNet should add staff to improve operations and reduce risk

SandyNet has enjoyed great success despite operating with an extremely lean staffing structure. Looking ahead, SandyNet should grow its staff to provide greater flexibility, add redundancy, and reduce pressure on key personnel. These changes will improve SandyNet's operations and reduce risk of staff turnover, burnout, or errors.

4.1 Stakeholder interviews and analysis of ISP operations indicates that SandyNet may face challenges if it does not increase staff capacity

SandyNet currently operates with a lean staffing structure that presents several challenges to the enterprise, including potential issues with customer service and slowdown of subscriber onboarding in times of peak demand due to lack of installers. Key personnel positions, such as the General Manager role, operate with little redundancy or support handling day to day operational needs. The enterprise generally lacks redundancy for key roles creating potential gaps in critical functions in the event of unexpected staff absence or turn over. The typical staff for an ISP with 3,000-7,000 customers consists of at least 15 employees, and sometimes considerably more depending upon the amount of construction work done in-house. SandyNet currently has 11 staff and pushes the boundaries of what can be sustainably achieved with a staff of that size.

SandyNet Organizational Chart



4.2 Benchmarks from similar ISPs emphasize need for additional staff while stakeholder interviews underscore risk of burnout for current staff

This plan compared the staffing structure of three regional ISPs to SandyNet. Results showed that in addition to operating with fewer staff than typical in the industry, SandyNet has fewer customer service staff than its peers, and fewer staff even than a peer ISP with fewer subscribers. All of the comparable ISPs also had at least three network engineers, to SandyNet’s two.

SandyNet currently has only one customer service representative (CSR) on staff. The enterprise is known for its excellent customer service, but current staff go above and beyond to maintain this excellence with working habits that are not sustainable. For example, SandyNet leadership covers after hours (evenings and weekends) customer service on an on-call basis. The lack of multiple CSRs was flagged by several stakeholders as an issue that could negatively impact customer experience, and one peer ISP manager interviewed stated that SandyNet should have at least four customer service representatives given its size.

Variation in staffing levels and the organization of small ISPs is natural, and depends upon the particular ISP strategies. For example, MINET started out with a relatively large staff that allowed them to add thousands of subscribers without needing to hire additional personnel. Other ISPs may have arrangements with entities that allow them to “borrow” staff as needed. Beacon Broadband only has one full-time network engineer, but their arrangement with Peak Internet, another ISP, gives them access to two additional network engineers when needed. However, SandyNet practices, such as the General Manager also overseeing City IT responsibilities and staff handling after-hours customer service calls reflect a notably lean approach to ISP staffing.

Staffing Structure of Comparable ISPs

Staff Role	SandyNet 3900 subs	MINET 7500 subs	Beacon 3550 subs	Average Salary Ranges in Oregon (in 1000s)
CEO/General Manager	1	1	1	\$107-182
Office Manager			1	\$54-84
Customer Service Representatives (CSRs)	1	8	5	\$38-40
Network Engineers	2	3	1	\$103-143
Systems Administrator	1			\$74-130
Field Technicians	6	11	7	\$53-79
Sales Representatives			2	\$51-91
Marketing Manager		1	1	\$68-122
Accountant/Bookkeeper		1	1	\$55-82
Finance Manager		1	1	\$80-177
Total staff	11	26	20	

Stakeholders consistently highlighted the impressive efforts of SandyNet staff at all levels. However, this model of operating at full capacity with on-call availability poses risks, such as burnout and turnover, particularly given SandyNet’s lack of staffing redundancy.

4.3 SandyNet should grow its staff and staff capabilities

As revenues are increased, SandyNet should consider allocating funds to implement the following staffing changes to mitigate challenges identified above. These changes are presented in order of priority, but SandyNet leaders should re-examine and re-prioritize based on updated business or operational concerns.

- 1. Hire after-hours customer service function:** Hiring an after-hours customer service function will allow SandyNet to continue delivering the great service it is known for, while at the same time relieving a burden from staff who are already operating at capacity. Service providers like NRTC, AnswerNet, and EPB can be contracted to field customer calls and provide basic troubleshooting, and SandyNet has pursued exploratory conversations with these vendors since 2023. Employing such services will ensure that customers can always speak with a person when

they are having service issues without having to rely on existing staff fielding calls on nights and weekends.

2. **Separate the SandyNet General Manager role from City IT role:** SandyNet's GM should be fully focused on running the enterprise. The City would also gain additional leverage from a dedicated IT staff member who could devote their full capacity to City IT needs.
3. **Add two additional customer service staff:** Filling these positions will immediately add resilience by ensuring backup is available for the current CSR role, and bring SandyNet more in line with regional and industry standards. Hiring additional customer service staff will also spread the burden of evening, weekend, and holiday on-call work.
4. **Add one additional network engineer:** Adding a third network engineer will ensure that SandyNet can continue to offer high quality and reliable service, relieve pressure on existing engineers, and bring Sandynet's staffing in line with regional norms.
5. **Add an assistant General Manager and implement more leadership opportunities for staff:** Adding an assistant general manager to oversee daily operations will create a stronger leadership structure that allows the GM to focus on high-level strategic work that is essential to the long term stability of the enterprise. With daily operations covered by an assistant GM, the GM can spend appropriate time on initiatives such as rate changes, reporting / compliance, financial planning, special projects (like more intentional marketing efforts) and the creation of robust and timely reports for the City Council and Advisory Council.

Freeing up some of the GM's time will also enable them to better engage with Sandy's community and function as the public face of the organization (e.g. by regularly attending community events). Developing and maintaining a strong community presence was identified as an essential part of business development by interviewees.

Other staff, with appropriate training, could also be promoted to management roles. For example, a senior network engineer could oversee the engineering team, and a lead utility worker could supervise the utility crew's day to day operations.

6. **Contract for external support to develop and implement a marketing campaign:** SandyNet has engaged in limited marketing efforts to date. Though it currently has a high take rate and limited competition, these conditions are not guaranteed in the future. Solidifying brand presence, awareness, and loyalty through marketing will help to capture business customers within the city now, and accelerate customer acquisition. Outsourcing to a professional marketing firm will be most efficient for SandyNet, and the contracted services should scale as the enterprise ramps up its marketing efforts. Sandynet should also consider industry standard marketing "quick wins", with or without professional marketing support, such as tabling at local events, sponsoring a local youth sports team, or implementing a customer referral program.

SandyNet should also seize opportunities to publicly celebrate its successes. Multiple Sandy stakeholders highlighted SandyNet’s excellent service and value, and indicated that they’d like to see more promotion of SandyNet. This could include large public celebrations of SandyNet milestones, such as achieving 100% coverage in the city, or the completion of other network construction projects.

7. **Establish talent pipelines to support future staff recruitment:** SandyNet should proactively identify and cultivate talent pipelines to ease the difficulties recruiting qualified technical staff in the future. SandyNet may begin by leveraging the regional educational institutions offering degree programs in fields relevant to the ISP’s staffing needs. The General Manager could pursue connections with program directors, present to classes, and generally make SandyNet’s presence as an employer known to these institutions.

Regional educational institutions with programs relevant to SandyNet staffing

Institution	Link to programs	Relevant Programs
Chemeketa Community College	Programs and Classes	STEM program
Clackamas Community College	Degree Options	STEM and Industrial Tech
Mt Hood Community College	Degree Options	Computers, Cybersecurity, & Game Development; Engineering & Math
Portland Community College	Computer Information Systems ; Electronic Engineering Technology	Computer Information Systems; Electronic Engineering Technology
Portland State University	Computer Engineering; Electrical Engineering	Computer Engineering; Electrical Engineering
University of Portland	Management Information Systems	Management Information Systems

SandyNet could also work to build its staff pipeline by developing apprenticeship programs and internships to introduce high school students and early career workers to the industry.

5. Rate adjustments are needed to ensure SandyNet's long term financial health

This section makes the case that SandyNet should adjust its rates to ensure the financial sustainability of the enterprise, adequately prepare for asset depreciation, and grow its staff.

5.1 SandyNet's rates lower than comparable ISPs in the Oregon and significantly lower than industry averages

A comparison with other Oregon ISPs (see table below) reveals that SandyNet's residential service tiers are priced lower than those of its peers. Comparable ISPs were selected based on their provision of fiber services, their similar size to SandyNet in terms of subscribers, and, in the case of municipal ISPs, their focus on operational sustainability rather than profit, thus having the motivation to keep rates low.

SandyNet's price for its base residential tier is \$10-\$35 lower than those of comparable ISPs. The price of SandyNet's base tier symmetrical 500 mbps service is also \$10 less than the 15/2 DSL service offered in Sandy by Ziply, a large national competitor providing service in and around Sandy.

SandyNet's rates also fall well below national averages. A recent study by the Technology Policy Institute indicates that 1G service plans have an average monthly price between \$105-\$118.

SandyNet, like half of the comparable ISPs, does not differentiate the price of residential and non-SLA business service. However, this is an uncommon practice nationally, where higher rates for business service are the norm. As the table below shows, the ISPs that differentiate business and residential pricing charge significantly more for business service than residential.

Rate Comparison of Oregon ISPs Offering Fiber Service

ISP Name	Approx. Subs	Muni.	Private	Res. Base	Res. Mid	Res. High	Bus. Base	Bus. Mid	Bus. High
SandyNet	3900	X		\$44.95	\$59.95	\$80.00	N/A	N/A	N/A
Beacon Broadband Inc.	3500		X	\$55.00	\$85.00	\$120.00	\$120.00	\$225.00	N/A
HiLight	1500	X		\$55.00	\$125.00	N/A	\$75.00	\$200.00	\$300.00
MINET	7500	X		\$59.99	\$84.99	\$129.99	\$59.99	\$84.99	\$129.99
Molalla Communications Co.	6500		X	\$75.00	\$125.00	N/A	N/A	N/A	N/A
Stayton	6500		X	\$80.00	\$90.00	\$130.00	\$80.00	\$90.00	\$130.00

Coop.Telephone Co.									
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5.2 SandyNet should create separate pricing tiers for non-SLA business customers

SandyNet should consider creating separate pricing tiers for non-SLA business customers, in line with industry standards. Importantly, SandyNet’s non-SLA business customers currently get network priority, which represents additional value that they are not currently charged for. Businesses can more readily absorb higher rates as part of their costs, making such increases less burdensome than for residential customers. Creating non-SLA business pricing will likely become an important revenue generation vehicle for SandyNet’s long term financial and operational health.

5.3 Rate adjustment models suggest several options to responsibly to increase revenue

RISI created a pricing analysis tool to allow SandyNet to explore the impacts of various price adjustment scenarios. The tool enables SandyNet leadership to make data driven pricing decisions by comparing multiple pricing scenarios, forecasting the impact of rate adjustments on operational revenue, and modeling customer growth.

5.3.1 SandyNet should target a minimum \$12 increase in Average Revenue Per User to account for medium and long term operational needs

SandyNet’s average revenue per user (ARPU) is currently \$50. In order to generate adequate revenue to devote appropriate funding to asset depreciation, staffing, and capital projects recommendations in this plan, it should raise its rates to increase ARPU to at least \$62. Though raising rates should never be done lightly, for the sake of Sandy residents and customers, it is imperative that SandyNet raise rates in their current situation to ensure long term operational sustainability. Fortunately, the enterprise’s historically low rates have left it with ample room to raise prices while remaining one of the most affordable ISPs in Oregon if not the country.

This plan presents three possible scenarios that raise ARPU by at least \$12. Each scenario includes price differentiation between business and residential customers in line with standard industry best practice. This strategy also shifts costs onto entities deriving greater value from the network (e.g. through network prioritization), rather than onto standard residential consumers. However, there are numerous scenarios available to SandyNet that would achieve the same revenue goals, and it should utilize the pricing tool associated with this plan to test and fine tune options that are acceptable to all relevant stakeholders.

Three possible options for rate adjustment scenario for SandyNet to consider include:

1. **Option 1: Raise all residential tiers by \$12 and all business tiers by \$24.** This would raise SandyNet’s ARPU by an estimated \$12.61.

2. **Option 2: Raise entry-level residential and business rates by \$12/month, and raise higher rates by greater amounts.** This scenario results in an estimated ARPU increase of \$14, and would give SandyNet a little more flexibility to pay debt faster, invest in staff, and engage in providing other community benefits.

3. **Option 3: Minimize rate increases for base tier residential users, and raise the rates of higher tiers by greater margins** This option would be similar to option two, but prioritizes keeping the bottom tier residential price increase as low as possible while still achieving the overall target ARPU increase. Notably, because of SandyNet's customer distribution, analysis showed that SandyNet cannot get away with raising their lowest tier less than \$8 while still achieving a \$12 overall increase in ARPU.

The tables below outline the details and impact of these rate adjustment options as modeled in the pricing analysis tool created for this plan.

Residential Pricing Options Input

Service Tier	Current Base Rate Per Month	Addition to Base Rate Option 1	Addition to Base Rate Option 2	Addition to Base Rate Option 3
Base (Half Gig)	\$44.95	\$12.00	\$12.00	\$8.00
Mid (1 Gig)	\$59.95	\$12.00	\$16.00	\$16.00
High (2 Gig)	\$80.00	\$12.00	\$24.00	\$24.00
5 Gig	\$110.00	\$12.00	\$24.00	\$24.00
Base (Half Gig) CBX	\$64.95	\$12.00	\$12.00	\$12.00
Mid (1 Gig) CBX	\$84.95	\$12.00	\$24.00	\$24.00
Wireless base (25/5)	\$39.95	\$12.00	\$12.00	\$12.00
Wireless mid (50/10)	\$49.95	\$12.00	\$24.00	\$24.00

Business Pricing Options Input

Service Tier	Current Base Rate Per Month	Addition to Base Rate Option 1	Addition to Base Rate Option 2	Addition to Base Rate Option 3
Base (Half Gig)	\$44.95	\$24.00	\$24.00	\$36.00
Mid (1 Gig)	\$59.95	\$24.00	\$36.00	\$48.00
High (2 Gig)	\$80.00	\$24.00	\$48.00	\$56.00
5 Gig	\$110.00	\$24.00	\$56.00	\$64.00
Base (Half Gig) CBX	\$64.95	\$24.00	\$24.00	\$36.00
Mid (1 Gig) CBX	\$84.95	\$24.00	\$36.00	\$48.00
Wireless base (25/5)	\$39.95	\$24.00	\$24.00	\$36.00
Wireless mid (50/10)	\$49.95	\$24.00	\$36.00	\$48.00

Combined Residential and Business ARPU output

	Option 1	Option 2	Option 3
ARPU	\$62.64	\$64.12	\$62.23
Difference between current ARPU and APRU with adjusted rates	\$12.61	\$14.09	\$12.20

SandyNet Annual Revenue Projections

Year	2025	2026	2027	2028	2029	Total Revenues and Increase Over Baseline at 5 years
Baseline Revenue Based on Current Rates	\$2,395,484	\$2,280,212	\$2,292,220	\$2,304,227	\$2,316,234	\$11,588,377
Combined Res. and Bus. Revenue Pricing Option 1	\$2,999,352	\$3,021,903	\$3,044,455	\$3,067,006	\$3,089,558	\$15,222,275
Revenue Increase Over Baseline	\$603,868	\$741,691	\$752,235	\$762,779	\$773,324	\$3,633,898
Combined Res. and Bus. Revenue Pricing Option 2	\$3,070,011	\$3,093,094	\$3,116,177	\$3,139,260	\$3,162,342	\$15,580,884
Revenue Increase Over Baseline	\$674,528	\$812,882	\$823,957	\$835,033	\$846,108	\$3,992,507
Combined Res. and Bus. Revenue Pricing Option 3	\$2,979,765	\$3,002,169	\$3,024,573	\$3,046,977	\$3,069,382	\$15,122,866
Revenue Increase Over Baseline	\$584,281	\$721,957	\$732,354	\$742,750	\$753,147	\$3,534,489

5.3.2 SandyNet is well positioned to meet any optics challenges presented by rate adjustments

Though rate adjustments can present customer relations difficulties, SandyNet's historically low rates have left the operation significant room to raise rates while still remaining competitive. Additionally, SandyNet enjoys a sterling reputation in the community and a proven customer service track record that functions as a strong PR base from which to make adjustments. To ease possible challenges around pricing changes, SandyNet may consider employing the following strategies:

- Send mailers with bills and conduct email campaigns before describing the adjustments, before, during, and after changes, starting two months before the increases
- Emphasize both the necessity of rate changes as well as positive changes adjustments will bring. Focus on points such as equipment upgrades / replacements to maintain the reliability and speeds customers love, adding key staff positions to ensure network reliability and resiliency, and keeping pace with inflation
- Review facts and messaging with SandyNet staff, City Councilors, and other City staff so that they are prepared to answer questions about rate changes
- Continually reaffirm SandyNet's commitment to excellent, affordable service through rates that will allow SandyNet to keep serving the community far into the future in all messaging, including website, mailers, and emails

5.4 SandyNet may wish to consider creating a low price tier or subsidy program to replace the defunct federal Affordable Connectivity Program

SandyNet may wish to consider creating an affordable internet package or subsidy program to replace the ACP in line with its mission to remove barriers to broadband access. SandyNet facilitated a \$30/month discount (paid by the federal government) for qualifying households when the ACP program was active, and the City currently offers reduced water and wastewater rates to qualifying customers. While some version of a federal internet affordability program may emerge in the future, if SandyNet were to enact its own program similar to that of the Water Department's, it could ensure that low-income residents have access to subsidized high quality internet service, while avoiding the administrative burden that comes with federal oversight.

SandyNet had relatively few (+/- 50) customers using ACP while the program was active. Assuming the same number of customers and the same \$30 discount that the ACP provided, it would cost approximately \$18,000 per year to run the program. Implementing the rate changes discussed above should provide enough additional revenue to support a subsidy program of this modest size.

The City currently qualifies customers for its discounted water and sewer rates, and may be able to qualify SandyNet customers as well. If SandyNet must qualify customers themselves, they could tie eligibility to participation in Federal aid programs (e.g. SNAP, WIC, Medicaid), and require customers to

furnish copies of participation documentation annually. Alternatively, SandyNet could engage an outside agency to conduct qualification and verification work on a contract basis.

6. Improving SandyNet's governance practices will benefit operations, aid in strategic decision making, and increase alignment with municipal leadership and functions.

As an enterprise fund targeting financial sustainability, SandyNet should strive to approach governance and operational decision making with a more structured business and financial lens. This section outlines recommendations concerning SandNet's advisory board and leadership.

6.1 SandyNet's advisory board should require more advanced financial reporting, and provide more rigorous advisory support with that reporting

SandyNet's advisory board currently serves as a consultative body, providing advice and feedback to the management team. However, the organization could benefit from a more structured and reciprocal relationship with the board, akin with the practices of a corporate board of directors, while still maintaining the advisory board's official advisory capacity and ultimate decision making authority with the city council. To achieve this, the following steps are recommended:

- **Provide regular reports:** SandyNet leadership should deliver comprehensive financial and operational reports to the board at defined intervals. The board should specify the format and content of these reports to ensure they are aligned with the organization's strategic needs
- **Ensure regular meetings:** The board should meet on a regular basis to review the reports, discuss organizational strategy, and develop formal recommendations for the City Council
- **Establish a relationship of mutual accountability:** SandyNet leadership should be accountable to the advisory board, responding to concerns and recommendations in a consistent and timely manner. Strong accountability exercises may include regular goal setting across finances and operations and tracking progress against goals.

SandyNet should also target retaining and adding advisory board members with financial, legal, engineering, and operational expertise. It is best practice for municipal utilities to staff their advisory boards with subject matter experts, as these experts can use their knowledge in service of the ISP while obviating the need for housing some of this expertise in the organization or with city policy makers, such as the council. The council should still ideally provide strategic input for the advisory board such as clear long term goals. This structure and board make up will allow SandyNet to bring fully formed and vetted

strategies to the city council, minimizing back-and-forth and solidifying the council's confidence in SandyNet's processes.

7. SandyNet should continue to prioritize resources to ensure compliance with relevant Federal and State regulations

ISPs must comply with varied and complex State and Federal reporting and regulatory requirements. SandyNet currently contracts with Logicom, a telecommunications regulation consultant for some of their compliance needs. SandyNet should consider growing this expert consulting relationship to ensure full compliance with Federal and State regulation.

This section highlights federal and state reporting and compliance requirements for SandyNet's consideration. SandyNet should consult qualified legal counsel for ultimate direction on how to comply with state and federal regulations.

7.1 Federal requirements for SandyNet's awareness

Broadband Consumer Labels: Similar to nutritional labels on food products, the FCC requires broadband consumer labels to clearly disclose the specifics of the broadband service provided. This initiative aims to enhance transparency for consumers, detailing what they can expect from their internet service. Smaller ISPs with fewer than 100,000 subscribers must adhere to this requirement by October 10, 2024.

SandyNet is currently working on its first Broadband Consumer Labels.

Broadband Data Collection (BDC) Filings: Broadband providers must annually report broadband data to ensure compliance with regulatory standards. Specific data as of December 31st must be submitted by the following March 1st, and data as of June 1st is due by September 1st. Failure to comply can result in significant financial penalties. More information is available on the [BDC FAQ](#) website.

SandyNet currently does its own BDC filings.

Communications Assistance for Law Enforcement Act (CALEA) System Security and Integrity (SSI) Plan: This plan outlines how telecom providers comply with law enforcement assistance requirements and is filed annually. Carriers must detail in their SSI Plan the specific measures taken to comply with CALEA, such as the technological and procedural steps implemented. The plan, which is not disclosed publicly, includes carrier contact information and a compliance certification. Filings are now required to be submitted electronically through the CALEA Electronic Filing System (CEFS), streamlining the process and enhancing security. For more information see the [Sample SSI Plan Checklist](#) provided by the FCC.

Logicom provided SandyNet with a protocol to follow in the event they need to respond to a subpoena or other law enforcement contact, and completes the required annual filing for SandyNet.

Customer Proprietary Network Information (CPNI) Certification: All Voice over Internet Protocol (VoIP) providers must obtain CPNI certification. This details the measures providers take to protect customer information, ensuring privacy and data security. The complexity of complying with CPNI regulations often necessitates legal guidance.

Logicom created SandyNet's CPNI policy and protocol, and handles the annual attestation renewal. If customers are able to sign up for service completely online (i.e. without any interaction with customer service staff), there may be implications for CPNI compliance, and SandyNet should consider updating its CPNI practices with Logicom.

Digital Discrimination Annual Certification: Introduced in 2023, this new certification requires ISPs to affirmatively state their compliance with non-discrimination standards in broadband deployment. This annual certification aims to ensure that broadband services are offered equitably across different communities without biased restrictions. Although specific reporting requirements for this certification are still under development, Oregon is part of a 15 state coalition advocating for exemption from these regulations, arguing that they are redundant and overlap with existing reporting mandates.

Logicom has provided SandyNet with a client alert regarding this requirement. Though no action is needed at this time, SandyNet should monitor this requirement.

Digital Millennium Copyright Act (DMCA): The DMCA protects ISPs from liability for copyright infringement by their users, contingent upon the ISPs meeting specific statutory requirements. Under Section 512 of the DMCA, ISPs are obligated to implement a notice-and-takedown process, which enables copyright owners to report alleged infringements. Upon receiving such notices, ISPs must promptly remove the reported content to benefit from "safe harbor" protections. Additionally, ISPs are required to publicly disclose these operational policies and may need to submit annual compliance reports detailing their adherence to these rules. For more information, visit the [DMCA website](#) and the [Overview of Section 512](#).

Logicom has provided SandyNet with a policy and protocol for responding to claims. SandyNet should ensure that they respond to all DMCA claims.

Emergency Alert System (EAS) Reporting: ISPs and other participants in the national EAS must annually file with the EAS Test Reporting System (ETRS), coordinated by the FCC and the Federal Emergency Management Agency (FEMA).

This requirement only applies to ISPs that offer video services, and SandyNet's third party video provider should be responsible for complying with EAS reporting regulations.

SandyNet should confirm the division of responsibility and full compliance on the part of the third party provider.

Network Outage Reporting System (NORS): The FCC mandates that telecom providers use NORS to report significant network outages, ensuring reliable communications infrastructure. Providers must submit an initial outage report within three calendar days of discovering the outage. A final, detailed report is due no later than 30 days after the outage is identified.

NORS has specific criteria for what triggers the need to report an outage. However, it is possible that the FCC may expand the criteria and require ISPs to report even minor outages in the future.

SandyNet should monitor NORS-related developments, review current reporting criteria, and review past outages to ensure correct reporting.

Universal Service Administrative Company (USAC) Filings: Telecom providers must contribute to the Universal Service Fund (USF), which is managed by the Universal Service Administration Company (USAC). Providers must register with USAC, annually file Form 499 to report their revenues, and thereby determine their required contribution to the USF. Exemptions apply under the De Minimis Rule for providers whose projected contributions would be less than \$10,000 annually, although they must still file annual reports. The FCC regularly adjusts the contribution factor rules, and state-level universal service programs may have different requirements. Providers are advised to consult with legal counsel and the FCC for the most current guidance. Logicom currently handles SandyNet's quarterly and annual USAC filings.

Form 499-A must be filed annually by April 1st. Form 499-Q (quarterly filings) are due on February 1st, May 1st, August 1st, and November 1st

7.2 Non-federal requirements for SandyNet's awareness

SandyNet management should coordinate with City management to ensure compliance with following Oregon requirements and other reporting best practices:

Annual Fee Payment and Statement: ISPs that hold a Certificate of Authority from the PUC must annually pay a regulatory fee and submit an accompanying fee statement to the Oregon Public Utility Commission (PUC) by April 1st. A late fee is imposed starting April 2nd, with additional penalties accruing each month. The statement must be filed online or via mail with an original signature.

Oregon Annual Reporting Forms: ISPs must file Form C: Annual Report Interexchange Carriers, Form L: Annual Report Local Exchange Carriers, and Form O: Annual Report to the Commission by April 1st and Form I by October 31st annually. These reports require detailed operational data, and failure to comply may lead to the cancellation of the Certificate of Authority. All forms must be submitted electronically

Oregon Universal Service Fund (OUSF) Contributions: ISPs must file the OUS1 Worksheet annually by February 10th and the OUS2 Contribution Worksheet quarterly. These worksheets detail the ISP's

contributions to the fund, supporting universal service across Oregon. Late filings incur a \$100 fee, and delayed payments are subject to a 9% daily interest on the balance due.

OUSF Quarterly Filing Deadlines:

- May 28th (Quarter 1: January 1 - March 31)
- August 28th (Quarter 2: April 1 - June 30)
- November 28th (Quarter 3: July 1 - September 30)
- February 28th (Quarter 4: October 1 - December 31)

Residential Service Protection Fund (RSPF): Contributions are due monthly by the 21st, supporting programs that ensure service affordability and availability. Late filings and payments attract a \$100 fee and a 9% daily interest penalty, respectively.

For further details and forms, see the [Oregon PUC Telecommunications page](#) or refer to the PUC's [Regulatory Requirements Chart](#).

Data Retention Policy: SandyNet should ensure that the City's data retention policy specifically references SandyNet.

Disability Access: SandyNet should conduct a full review of their inclusion in City accessibility policies as well as broadband-specific accessibility requirements (e.g. the [21st Century Communications and Video Accessibility Act](#)). It should also implement policies to thoroughly document (e.g. via meeting minutes) internal discussions on systems or platform changes, how they impact customers with disabilities, and what determinations were made to mitigate those impacts.

8. Network expansion will strengthen SandyNet and bring additional resources into the community

SandyNet is close to achieving 100% coverage within city limits, with only a few apartment buildings remaining to be connected. Once that significant milestone is met, strategic expansion outside of the City can bring additional revenue to the enterprise, and if structured well, will bring financial resources into the Sandy community.

This section outlines how SandyNet can evaluate growth opportunities outside city limits in a responsible manner to ensure fiscal sustainability while increasing financial and social benefits for the City.

8.1 Expanding the fiber network will help SandyNet to add customers, increase revenue, and grow sustainably

SandyNet should look to expansion of the physical fiber network and the concomitant customer growth to increase revenue. Growth is key to a successful operating model for municipally-owned ISPs at Sandy's scale and in line with SandyNet's mission.

At just under 4,000 customers, SandyNet has the foundational management staff and systems in place to allow for efficient scaling. This is a typical inflection point for ISPs where new subscribers can grow revenue linearly but only add costs incrementally. SandyNet's high penetration rate within city limits does not allow for much growth inside their current footprint, making expansion of the fiber network a more viable path to growth. Relatively modest growth will still help SandyNet reach its revenue targets, and successful expansion outside of city limits will provide reputational benefits to the ISP and City, increasing Sandy's center of gravity in the region.

8.2 Expansion to date

SandyNet has been focused on working inside city limits with great success. Currently it is on the cusp of achieving 100% service in Sandy proper and is finishing construction to bring fiber to the remaining homes in Sandy that are not served. This is a tremendous milestone. Additionally, Sandy's municipal code requires broadband to be expanded to future developments in the city, ensuring continued universal coverage.

Clackamas Broadband Exchange (CBX) recently engaged SandyNet to bring broadband access outside the city. Fiber has currently been deployed to the east and northeast of Sandy, and construction is underway southwest of the city. To date, CBX has decided where to build based on available grant funding, identification of under- and unserved areas, interest expressed by potential customers, and proximity to their existing fiber network. In this model CBX funds and builds out the fiber infrastructure, and SandyNet serves as the ISP, connecting customers' homes and businesses to the fiber and providing customer support.

The partnership has been beneficial to the City as SandyNet has not had to devote resources to construction - a complex and expensive endeavor - and the ISP is compensated on a per-customer basis. Since CBX covers fiber construction costs, there are no losses to SandyNet if customers aren't added to the network. SandyNet currently captures between 60-70 percent of revenues from customers added to the CBX network without any outlay of funds. CBX is also an open access network, meaning that SandyNet may experience varying levels of competition from other ISPs in CBX territories. Overall, there is little risk and much benefit to SandyNet participating in the CBX partnership.

In addition to construction, CBX also handles maintenance and repairs to the fiber, and has demonstrated a commitment to doing so in a way that upholds SandyNet's commitment to excellent service.

8.3 Frameworks for future expansion

There are two primary paths for expansion: continued partnership with CBX, and SandyNet building infrastructure itself. This section outlines considerations for both options.

8.3.1 Considerations if SandyNet were to grow their partnership with CBX

Though modest in its current scale, the partnership with CBX has been successful, and the amount of revenue flowing back to Sandy has increased over time. SandyNet should keep filling the role of ISP if CBX remains a strong operational partner and continues to expand its fiber network throughout Clackamas County.

Under this model, SandyNet likely will still need to follow CBX's lead on location and pacing of new construction. This may lead to the *perception* that expansion is scattershot, but such work still supports SandyNet's mission and brings in revenue to fund other goals and increase SandyNet's operational and financial health. Additionally, CBX has historically been dependent on grants to fund network expansion. Under this model, if grant funding is not available, expansion may not be able to progress at the desired rate. The Broadband Equity, Access, and Deployment (BEAD) program may provide a funding opportunity, with CBX as the infrastructure builder and SandyNet as operator, but beyond that program, it is not clear that much grant funding will be available to fuel CBX's expansion.

8.3.2 Considerations if SandyNet were to expand outside of Sandy as the infrastructure builder, owner, and operator

There are several advantages to SandyNet to building, owning, and operating their own fiber infrastructure outside of Sandy:

- SandyNet would fully control location and pace of expansion
- The infrastructure would count as an asset that can be used to leverage debt
- Operational logistics would be simplified since SandyNet would have end to end control of the system
- Ownership of the fiber, rather than operation in an open access environment, could prevent possible encroachment by competitive ISPs

ISPs - municipal or otherwise - that pursue any amount of meaningful expansion almost always use debt of some kind to achieve their goals. Use of debt for expansion would be a viable and ordinary path for SandyNet, but it should only be pursued after the following conditions are met:

- Staffing is stable and comparable with that of other ISPs of similar size, ensuring that SandyNet has the capacity to grow

- Sufficient data has been collected on take rates of CBX infrastructure to allow for confidence in modeling anticipated take rates outside of the city
- The business case for expansion has been fully developed, and revenue projections indicate that debt service coverage ratios are strong enough to satisfy financiers
- Financial practices throughout the enterprise are strengthened so that financiers have confidence in SandyNet's ability to track risks and make adjustments to their operating model to maintain debt service coverage

When these conditions are met and the expansion analysis is favorable, SandyNet should consider pursuing revenue bonds as debt financing for expansion. 30 year revenue bonds are safe, stable, and predictable. As essentially a public utility, there is no need for SandyNet to strain to make debt service payments on lending vehicles that are shorter and have greater principle and interest obligations.

SandyNet could consider various strategies around the sequencing of expansion, such as:

- Connecting homes and businesses along existing fiber routes outside city boundaries. For example, SandyNet could add customers along a fiber route already built to service a large commercial customer like a water treatment facility. Creating a business case for adding customers along existing fiber should not prove difficult, and this type of expansion is generally considered low hanging fruit for ISPs because of the minimal construction expense required.
- Building out fiber to the Urban Reserve Boundary (URB) areas identified in the 2017 Urban Growth Boundary Expansion Analysis. The URB contains areas of varying residential density as well as industrial areas, representing a potential mix of residential and business customers. Some areas of the URB, especially those southwest of the current Urban Growth Boundary, are not currently served by fiber networks. SandyNet should first develop a strong business case for serving these areas, with the ultimate goal of serving the entire URB. The ISP should pay attention to any possible equity issues that might arise if this strategy is followed, and make plans to mitigate such issues.
- Prioritizing the un- and underserved areas in proximity to Sandy. SandyNet would gain the first mover advantage by building in these areas. RISI's Rural Broadband Map (<https://rural-broadband-map.ruralinnovation.us/>) indicates that there are over 400 un- and underserved locations in the areas surrounding Sandy. Business modeling may be most accurate in these areas as there are no competitors offering fiber service. Building in un-and underserved areas also presents a strong equity case that could have reputational benefits for the ISP.

In these scenarios SandyNet would also need to mitigate the optics challenges inherent in choosing one area to build ahead of another. ISPs navigate this by ensuring that their plans are defensible, and communicate expansion plans clearly with sensitive messaging around how the plans were made.

8.4 SandyNet should be a strong driver for economic development before and after expansion

Growing bodies of academic research show that widespread broadband access has positive economic impacts,¹ including increases in regional GDP², consumer surplus, and business startup rates.³ Each of these conditions result in more money flowing into- and staying in- local economies. Expansion of SandyNet's footprint will garner economic benefits for the City and help Sandy to meet Goal 2 of its Economic Development Strategic Plan to "leverage our investments in technology to maximize economic benefits."

Even without expansion, there is significant precedent for municipal ISPs driving economic development via the quality of the infrastructure on its own. Access to quality broadband connections has positive correlations with increased real estate values and home sales. Municipal provision of such services also signals that a community is a great place to live, with strong, forward thinking public sector leadership. Access to fast, reliable broadband enhances quality of life and fosters connections across multiple social domains like families, businesses, educational institutions, and the health care system. When a community recognizes this - as Sandy has - and strives to provide broadband access, it clearly demonstrates their commitment to making that community a prime destination for people to live, conduct business, and visit.

Quality broadband access is a necessary precondition for remote work as well. Expansion outside of the city may also help to attract remote workers who would prefer to live in the environs rather than the city proper. Such workers would still provide economic benefit to Sandy as they will patronize city businesses. The economic benefits of expansion would be further catalyzed through intentional strategies centered on business development, entrepreneurship support, and workforce expansion. Bringing businesses into communities provides a multiplier effect, as the businesses not only spend money in the community, but also establish it as a desirable place for other businesses to locate.

SandyNet can also take an active role in economic development by supporting and implementing programming that promotes internet usage and can help drive the creation of quality jobs that is part of Sandy's strategic plan. There are numerous national examples of initiatives undertaken by municipal and cooperative ISPs to stimulate economic development in creative ways beyond simply providing connectivity. A few examples include:

¹ Kessler et al. 2021 "How will expanding broadband access benefit Knox County, TN?" UT Knoxville, Boyd Center for Business and Economic Research.

² Qiang, C.Z. & C.M. Rossotto 2009 "Economic Impacts of Broadband." In Information and Communications for Development 2009: Extending Reach and Increasing Impact. Washington DC: World Bank, p.35-50

³ Deller et al. 2021 "Rural broadband speeds and business startup rates." American Journal of Agricultural Economics 104(3):999-1025

- Paul Bunyan Communications, a cooperative ISP in Bemidji, Minnesota hosts the annual Gigazone Gaming Championship and TechXpo. This event draws thousands of participants to Bemidji each year. In addition to the gaming competitions, the event also serves to connect tech businesses with the general public and potential employees, promoting internet use and tech career opportunities.
- Greenlight Community Broadband, a municipal ISP in Wilson, North Carolina supported the development of the GigEast Exchange, an innovation hub and co-working space. GigEast hosts the RIoT Accelerator Program, which provides intensive business coaching and other services to early-stage startups and supports tech entrepreneurship.
- NextLight, a municipal ISP in Longmont, Colorado, supports Longmont Startup Week by providing fiber internet connectivity to the event's "base camps." The event is a week-long convening of entrepreneurs, investors, and experts designed to nurture Longmont's entrepreneurial ecosystem and provide support for early-stage startups.

If SandyNet chooses to develop and implement similar programming, it would provide benefits to both the enterprise and Sandy at large by helping to address the goals and strategies outlined in Sandy's Economic Development Strategic Plan.

Master Plan Appendix

SandyNet Proposed Ranking System for Rural Expansion

The purpose of this document is to provide supporting information regarding the expansion strategy for the City of Sandy's municipally owned and operated Internet Service Provider, SandyNet. This document includes the driving forces behind the expansion strategy's purpose with respect to SandyNet's prior, current, and future goals. Many of SandyNet's goals were updated under SandyNet's 2024 Telecommunications Master plan, which at the time of writing this document, has not yet been adopted by the City of Sandy City Council.

One of the prerequisites for the master plan's approval has been to include a rubric for ranking and identifying new broadband serving areas. SandyNet staff has worked with the City of Sandy's Administration department, as well as its SandyNet Advisory Board to create a system for identifying and vetting new service territories.

There are several factors and priorities that SandyNet must consider prior to determining a service area. The ranking of those various criteria has been identified to be best represented in the form of a table, where each identified service area is assessed and determined to be feasible or otherwise viable. The factors for the rural expansion rubric include exclusivity, proximity to existing infrastructure, the cost incurred per subscriber, fiscal feasibility for revenue, important community factors, fitness within SandyNet's network, and the level of capital investment required.

BACKGROUND

On March 25, 2024, Staff announced an intent to award the contract for the SandyNet Telecommunications Master Plan to Rural Innovation Strategies Inc (RISI). RISI conducted interviews with key stakeholders, analyzed SandyNet assets and financials and compiled a master plan that lays out opportunities, challenges, and recommendations to continue and improve the SandyNet public utility. On November 21, 2024, the SandyNet Advisory Board reviewed, discussed, and endorsed the SandyNet Telecommunications Master Plan. The master plan was presented to Sandy City Council on December 16, 2024 and has not yet been adopted.

On January 6, 2025, SandyNet staff was informed that the master plan required additional information on how the department expected to expand into areas outside of Sandy city limits. That request was further updated at the 2025 City of Sandy Council Goal Setting on February 1, 2025. Council goals were adopted in March 2025, which include two main goals and one subgoal for SandyNet.

First, to "Complete, adopt, and implement the SandyNet Master Plan to ensure the resilience and sustainability of the utility, including staffing levels and space needs."¹ In addition to the first goal, the driving force behind this document, SandyNet is to "[d]evelop clear criteria for determining when and where SandyNet expansion will occur."² The second goal was for

¹ City of Sandy. City Council Goals for FY 2025-2027. <https://www.ci.sandy.or.us/citycouncil/page/2025-27-city-council-goals>.

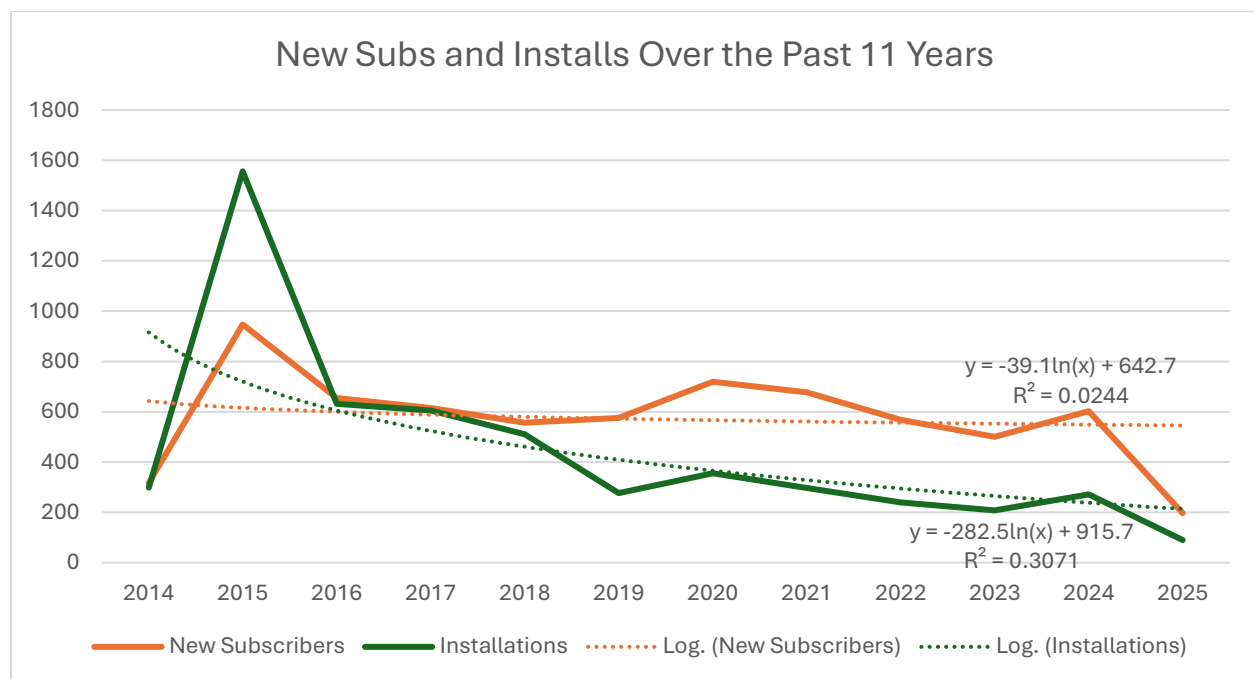
² Ibid.

SandyNet to “[a]dvocate for development of a Clackamas County CBX master plan that incorporates Sandy’s needs and priorities into the decision-making process for CBX system expansion in the Sandy area.”³

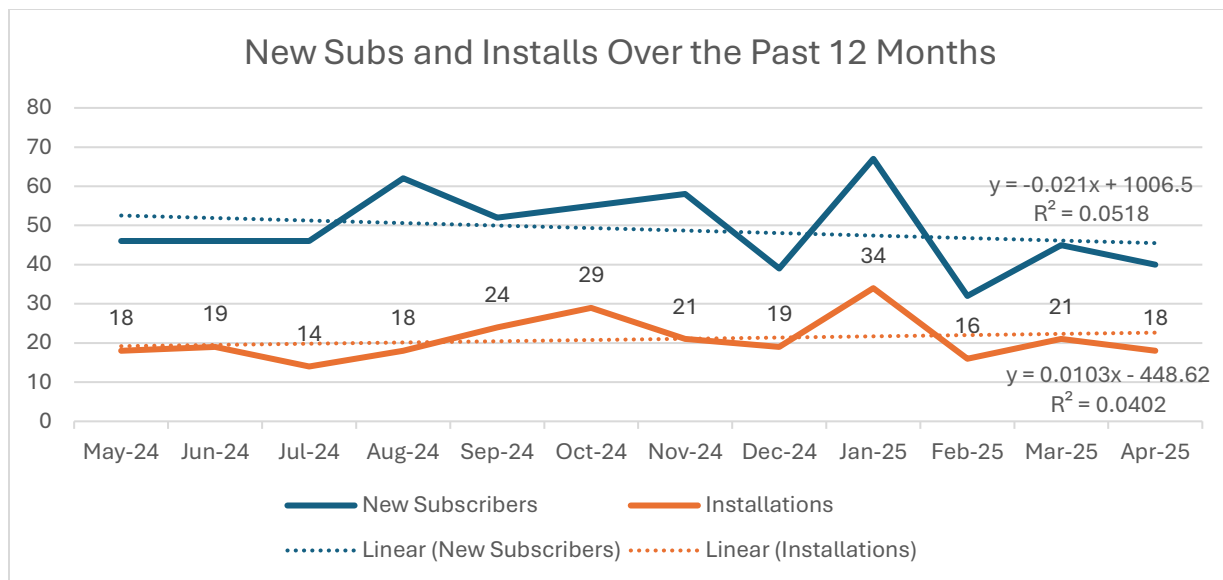
In addition to the Council goals, there are other circumstances that contribute to the structure of SandyNet’s expansion criteria. At the time of writing this document, there are three main drivers that need to be explained prior to discussing the rubric, which include the need for additional revenue, explanation of the current building moratorium within city limits, and the addressing of unserved/underserved areas in and around Sandy.

Revenue

SandyNet has historically used new service connections as its main driver for revenue. Since 2014, SandyNet has seen a steady decline in new installations being performed, and a consistent level of new subscribers. New installations have occurred when either new equipment is installed in a home for the first time, or replaced after a prior subscriber has removed the equipment upon moving out. New subscribers are both new installations and those moving in where equipment is pre-existing inside the home. The number of new subscribers has not declined at the same rate as installations. Details for new subscribers and installations can be found in the charts below, along with their trendlines.

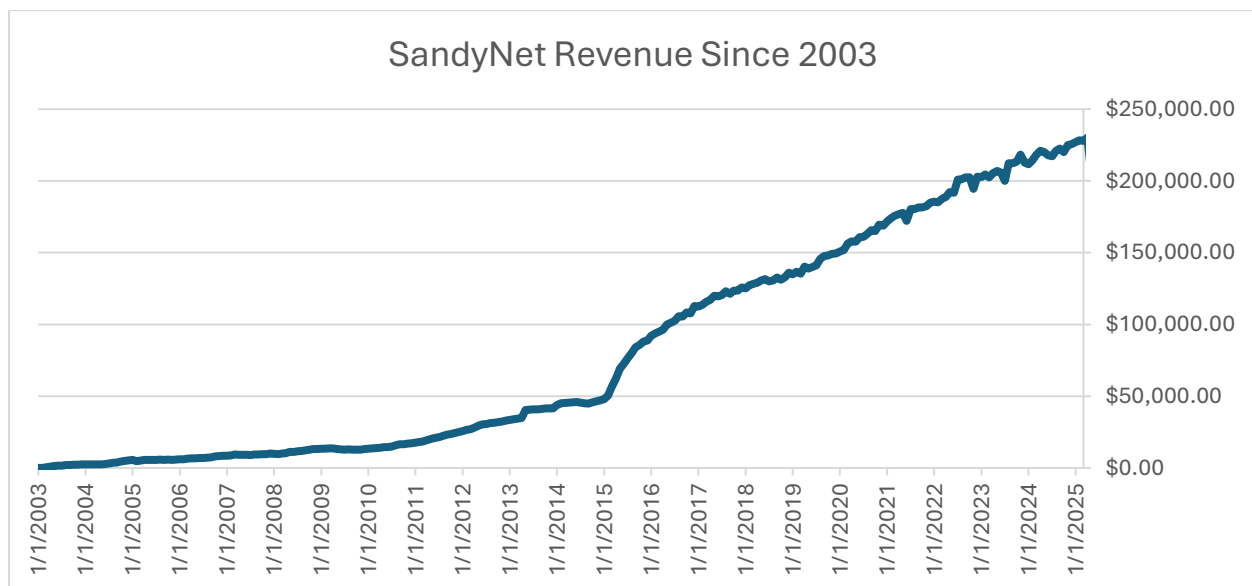


³ Ibid.



The decline in new installations is likely attributed to SandyNet’s saturation rate of roughly 80%. In addition, the sewer moratorium, which is explained in the next topic, has contributed to fewer new homes in Sandy, which has resulted in fewer new installations. The bump in installations that was observed in 2020 is likely related to the COVID-19 pandemic and the bump in 2024 is due to major milestones achieved during the Colorado and Gunderson Rd project. Under the Colorado and Gunderson Rd project, SandyNet partnered with CBX to construct and operate rural fiber outside of city limits.

Contrary to the declining installations, revenues have steadily increased over time. This is due in part to higher profile accounts and periodic rate increases for residential fiber service.



SandyNet originally had set its tiers at 100/100Mbps for \$39.95 in 2014. In 2017 SandyNet increased its base tier speed to 300/300Mbps. In June 2019, SandyNet increased its rates from

\$39.95 to \$41.95 for its 300Mbps tier.⁴ That price increased again in June 2022, due to high inflation costs for materials and services.⁵ The speed of the 300/300Mbps package was also increased to 500Mbps. SandyNet has now proposed a rate increase, in response to rising costs for materials, salaries, benefits and services. In July 2025, pending adoption of the Master Fee Schedule for FY 25-27, the rate for 500/500Mbps service will increase to \$52 and \$67 for gigabit service. This rate increase is also called for in the SandyNet Master Plan, which indicated the need for a \$12 increase in Annual Revenue Per User (ARPU) to replenish the replacement fund for physical and electronic assets.⁶

Building Moratorium

In 2022 Sandy City Council adopted a moratorium that would prevent the processing of new land use applications. The building moratorium was adopted because of a mandated limit on new connections for the City of Sandy's wastewater collection and treatment systems.⁷

Since then, the City has made progress towards increasing capacity. Capacity is measured in Equivalent Residential Units (ERUs), where one ERU is equal to one single family residential home. In June 2024, resolution 2024-11 was adopted, which enabled access to 570 ERUs⁸.

Since the increase in available ERUs, SandyNet has seen several developments approved and begin construction. New connections are expected to come in over the next couple years, which will provide some growth within city limits, but not enough to achieve the ARPU laid out in the master plan. There is also no guarantee at this time that the moratorium will be lifted, or that additional ERUs will be allocated after the all of the existing ERUs are allocated

Unserved/Underserved Areas

Within this document, the terms unserved and underserved are defined by the Federal Communications Commission (FCC). An unserved area is defined as a location that cannot achieve a download speed of 25Mbps and upload speed of 3Mbps. On March 14, 2024 the FCC defined underserved as is a location that is not unserved, but unable to achieve download speeds of 100Mbps and upload speeds of 25Mbps.⁹ Even before the FCC updated its definition for broadband, many funding opportunities required 100/25Mbps speeds, such as the Coronavirus

⁴ Tyler Deems. City of Sandy Staff Report for City of Sandy Council Meeting on June 17, 2019.

⁵ Tyler Deems. City of Sandy Staff Report for City of Sandy Council Meeting on June 20, 2022.

⁶ City of Sandy. SandyNet Master Plan, November 2024. P.15

⁷ City of Sandy. Equivalent Residential Units (ERUs) Currently Available for New Development.

<https://www.ci.sandy.or.us/development-services/page/equivalent-residential-units-erus-currently-available-new-development>.

⁸ City of Sandy. A Resolution Approving a Moratorium on Development Pursuant to ORS 197.505 to 197.540 Based on Limited Sanitary Sewer Capacity.

https://www.ci.sandy.or.us/sites/default/files/fileattachments/administration/page/21509/resolution_2024-11_-_approving_a_moratorium_on_development_pursuant_to_ors_197.505_to_197.540_based_on_limited_sanitary_sewer_capacity.pdf

⁹ Federal Communications Commission, FCC Increases broadband Speed Benchmark. March 14, 2024. <https://docs.fcc.gov/public/attachments/DOC-401205A1.pdf>

State and Local Fiscal Recovery Funds, which were distributed to states and local governments through the Department of Treasury.¹⁰

Federal and state funds typically focus on providing service to unserved areas. There are pockets of unserved homes near city limits, but most areas that are unserved are far beyond SandyNet's existing footprint. Most recently, the Broadband Equity and Access Deployment (BEAD) program identified 2440 unserved locations within the Oregon Trail School District (OTSD). At the time of writing this document, the BEAD program has been placed on hold as determined by the Oregon Broadband Office (OBO). SandyNet knows the locations of unserved households in OTSD.

DISCUSSION

In line with the first Council goal and subgoal, SandyNet needs to provide a clear criterion for when and where it will expand its territory. The ranked table below is written to include the considerations outlined in the background section and provide supporting information on each of the ranked criteria.

Revenue generation was outlined as one of the easiest ways to achieve effective economies of scale for SandyNet. "At just under 4,000 customers, SandyNet has the foundational management staff and systems in place to allow for efficient scaling."¹¹ SandyNet needs to continue growing to gain additional efficiencies. "SandyNet's high penetration rate within city limits does not allow for much growth inside their current footprint, making expansion of the fiber network a more viable path to growth."¹² Coupled with uncertainty from the sewer moratorium, SandyNet sees expansion outside city limits as an increasing priority for increasing the number of new installations and ARPU.

The SandyNet Master Plan outlines several strategies for expansion, such as connecting homes and businesses along existing fiber routes, building out the Urban Reserve Boundary (URB) and prioritizing construction to unserved areas, of which there is no provider currently supplying service that meets the FCC's definition of broadband.¹³ Finally the master plan mentions a need to be sensitive to any optics issues or challenges that may present themselves by choosing one location over another.¹⁴

Ranked Criteria

The rank table below provides a list of each criterion and its maximum score. By assessing these different criteria for new deployment territories, SandyNet can determine which projects are feasible, and then prioritize those areas by combining both quantitative and qualitative information into an overall assessment. This criterion can also accommodate projects with CBX, which is mostly discussed under the capital investment section.

¹⁰ Department of the Treasury, Coronavirus State and Local Fiscal Recovery Funds, Final Rule. May 17, 2021. P.294.

¹¹ SandyNet Master Plan. P.23.

¹² Ibid.

¹³ Ibid at P.25.

¹⁴ Ibid.

The ranking is performed on a scale from zero to five. Any rank that is zero, automatically disqualifies the project from being feasible. Totals are added up to determine the overall score. Projects that rank highest are deemed more feasible overall.

Description	Score Possibility
Exclusivity	(0-5)
Existing Infrastructure	(0-5)
Subscriber Cost	(0-5)
Revenue Opportunity	(0-5)
Community Factors	(0-5)
Fit w/Existing System	(0-5)
Capital Investment Required	(0-5)

Exclusivity

Exclusivity speaks to access, zoning and other factors that make up the location of its surrounding area. One factor that can be considered includes the location's status as defined by the FCC (served, unserved, underserved). Another factor includes the location's current access to other providers. In an unserved status, there are no other providers, but when the area is already served, or underserved, those locations may not have any other viable alternatives. Density or zoning may also play a factor in determining a location's exclusivity. At the county level, classifications of agricultural, farm, rural commercial, or residential may contribute to the exclusivity rating.

Finally, there is an optics component to the exclusivity ranking. Locations that are part of a larger development, or that have higher assessed property value and density are likely to have more access to broadband via other service providers. When multiple providers compete in one area, the cost of broadband is typically driven down through competition, which in turn makes those with higher assessed property values more likely to have more affordable broadband service than unserved areas. This is a mechanism that will not always fit every location, and if SandyNet ranks and builds an area that is determined to be more exclusive, it needs to consider any negative optics for servicing that area.

Existing Infrastructure

Middle mile costs for broadband are significant, and using existing infrastructure can help drive down deployment costs as well as optimize the usage of conduits, Passive Optical Network (PON) ports, and other assets. Efficiencies gained through usage of existing assets require fewer to no additional right of way permits for expansion.

SandyNet has infrastructure along several large roads heading outside of its city limits. Additionally, fiber infrastructure is extended to many City own facilities that are operated by the City's Public Works department. There are two significant expansions of Public Works fiber facilities expected to be completed within the next two years. The first is to connect to the new Portland Water Bureau treatment plant, and the second is the extension of fiber to several water

producing sites east of Sandy. Two of the four projects appear to be ideal for reaching unserved areas as well as providing access to higher density areas.

Subscriber Cost

This ranking is for the cost that would be incurred by SandyNet to extend to a specified location or within a project. In unserved areas, the cost to construct fiber to a single home may cost tens of thousands of dollars, but when coupled with other areas, or a larger deployment, that cost can drop to a manageable level. This rank considers the ideal break even point for deploying fiber, and the expected take rate. The expected take rate is somewhat coupled with exclusivity, where more exclusive areas have traditionally yielded lower take rates. Cost, existing/future competition, speed/offerings, exclusivity, local community factors and larger macro-economic factors all contribute to expected take rate in a deployed area.

This section also contains the results of an area's return on investment. SandyNet's return also feeds into revenue considerations as well as capital investment considerations. A return on investment is ideally less than five years, but depending on the area and other factors, that ROI can sometimes be extended, or reduced. Additionally, the subscriber costs are generally too high, when deployment area's density is less than 12 subscribers per mile.

Revenue Opportunity

This rank speaks primarily to the SandyNet budget and ARPU requirements. Increasing ARPU requirements in accordance with operational and capital expenditures works towards SandyNet's fiscal goals. It's also important to note that rural fiber rates are higher than in-city rates, because of the higher cost required to build broadband into low density areas.

It is also worth noting that revenue opportunities as well as many other factors may be given higher priority depending on the current economic climate or other factors like a sewer moratorium.

Community Factors

This section aims to consider any relevant community factors. Some factors may be local, and others may be at the county, state or federal level. Examples include items like funding opportunities, community perceptions towards the City or SandyNet, controversy over the selection of areas, the perceived role of municipal ISPs, etc.

Local or micro factors are important to consider when assessing this section. Assessing each area as a unit and surveying interest prior to beginning construction is likely to reduce many negative factors.

It is also important to note that the scores for each potential build location may change over time. Cost changes, efficiencies can increase or decrease, community factors might look different in five years, etc. Some factors are stickier than others, such as community perception of SandyNet or a community's potential lack of desire for construction in their area.

Fit with Existing System

SandyNet uses a universal method for deploying fiber optic service within city limits. To put it more accurately, SandyNet has integrated all its existing deployment methods over the past 10

years to create a network and set of operating procedures that equip them to run and maintain the existing system.

SandyNet has always recognized the balance and need to both innovate new ways to get work done and maintain their existing model. When there is a good fit or reason to adjust or deviate from a standard method, it is often accepted, however there must be some valid rationale driving the decision.

Examples of fitness may include necessary changes to deployment strategies, like a phased approach, delivering service overhead versus underground, changing fiber vendors for specific deployment areas¹⁵, etc.

SandyNet Staff will need to determine if there are significant deviations from the norm in order to achieve a successful deployment, and determine if that change is worth the risk, cost, overhead or to time to complete. Fitness may change over time, as barriers to change increase or decrease.

When the level of fitness is reassessed or modified, prior projects should be revisited and reassessed to determine if they are still not feasible. For example, if SandyNet were to begin deploying fiber from poles, some areas may see a drastic reduction in deployment costs, that may now make them feasible.

Capital Investment Required

This section speaks to the level of effort that is required to reach an area, with a focus on capital. This includes materials, labor, electronics, and other assets like IP addresses and new facilities. Between revenue and subscriber cost considerations, this section is also used to assess the additional impact an area would have on SandyNet's replacement schedule.

The separation and recording of capital investments helps identify the one-time costs from the recurring costs for operation or service delivery. Those assets are depreciated across their useful life, meaning that SandyNet must now consider the future cost to replace equipment like fiber optic cables. It's also important to note that those replacement costs may be higher in rural areas. Another consideration around asset replacement and the labor required to replace those assets is the differentiation between one time construction costs and replacement costs. The cost to place conduit is likely a onetime charge and should not need to be replaced, whereas the cost to pull replacement fiber inside of a conduit is likely to be on a 20–30-year schedule.

Finally, another aspect that must be considered is SandyNet's partnership with CBX. When CBX focuses on new areas of deployment, they have historically gone to areas that are considered unserved and are available for state and federal funds. When CBX invites SandyNet to service a rural area with residential fiber service, the capital investment required by SandyNet is drastically reduced. In all prior agreements between SandyNet and CBX, CBX has constructed and maintained the fiber plant and assets, and SandyNet has only had to focus on electronics, IP addresses and in-home equipment.

CONCLUSION

¹⁵ This refers to back-office equipment that may provide PON-on-a-stick or a one, two or four port OLT system.

This criterion aims to consider many aspects of rural fiber deployment and compare against each other to determine their feasibility and potential priority. While many of the rankings are qualitative, they add up to a total score that helps weed out areas that are not feasible or practical. SandyNet believes that this model offers enough due diligence to effectively identify new areas to construct fiber. Project assessments should use the rubric defined in this document and show that a substantial effort was made to properly assess and grade the area. Areas that are deemed unfeasible for construction should be visited from time to time to verify that no major factors have changed that might now make a project feasible.

Attachment A. Sample of Project Template

SandyNet Project Feasibility Report

Lastest Updated on 5/20/2025

Project Name: _____

Prepared By: _____

Design Required: Y / N

Within City Limits: Y / N

Nearest Central Office: _____

Project County: Clackamas

Exclusivity

County Zoning/Density	
Current BSPs	
Fiber Optic Availability	
FCC Served Status	
Median Property Assessed Property Value	
Other Factors	
Rank (0-5)	
Comments	

Existing Infrastructure

Nearby Infrastructure	
Conduit Availability	
Spare Fiber Available	
Fiber Overpull Required	
Fiber Replacement Required	

Distance from CO	
Existing PON/Splitters	
Infrastructure Age	
ROW/PUE Available	
Existing Permits/Modifications Required	
Other Factors	
Rank (0-5)	
Comments	

Subscriber Cost

Number of Homes Passed	
Expected Take Rate	
Design Required	
Mainline Distance Required	
Drop Distance Required	
Terminal Distance Required	
Required PON Ports	
Homes Per Mile of Mainline	
SandyNet Cost Per Subscriber	
Expected ROI w/Consideration of Expected Take Rate	
Other Factors	
Rank (0-5)	
Comments	

Revenue Opportunity

ARPU Increase for Project Footprint	
Expected Operational Costs w/Expected Take Rate	
Expected Capital Costs w/Expected Take Rate	
Packages Offered	
Economic Factors (Micro/Macro)	
Rank (0-5)	
Comments	

Community Factors

Identified Community Factors within Project Area	
Identified Relevant Factors within Project Area	
Identified Relevant Factors for City of Sandy	
Survey Required	
Macro/National Factors	
Rank (0-5)	
Comments	

Fit with Existing System

Deployment Type	
Identified Architecture	
Overhead Required	
FMS Reprogramming Required	
Identified Vendor	
Staff Retraining Required	
Other Factors	
Rank (0-5)	
Comments	

Capital Investment Required

Capital Cost Range Between Low and High Take Rate	
CBX Joint Project	
Replacement Schedule	
Purchase of Additional IPv4 Addresses	
Expected Labor Required	
Expected Land Acquisition	
Expected Facilities Required	
Other Factors	
Rank (0-5)	
Comments	