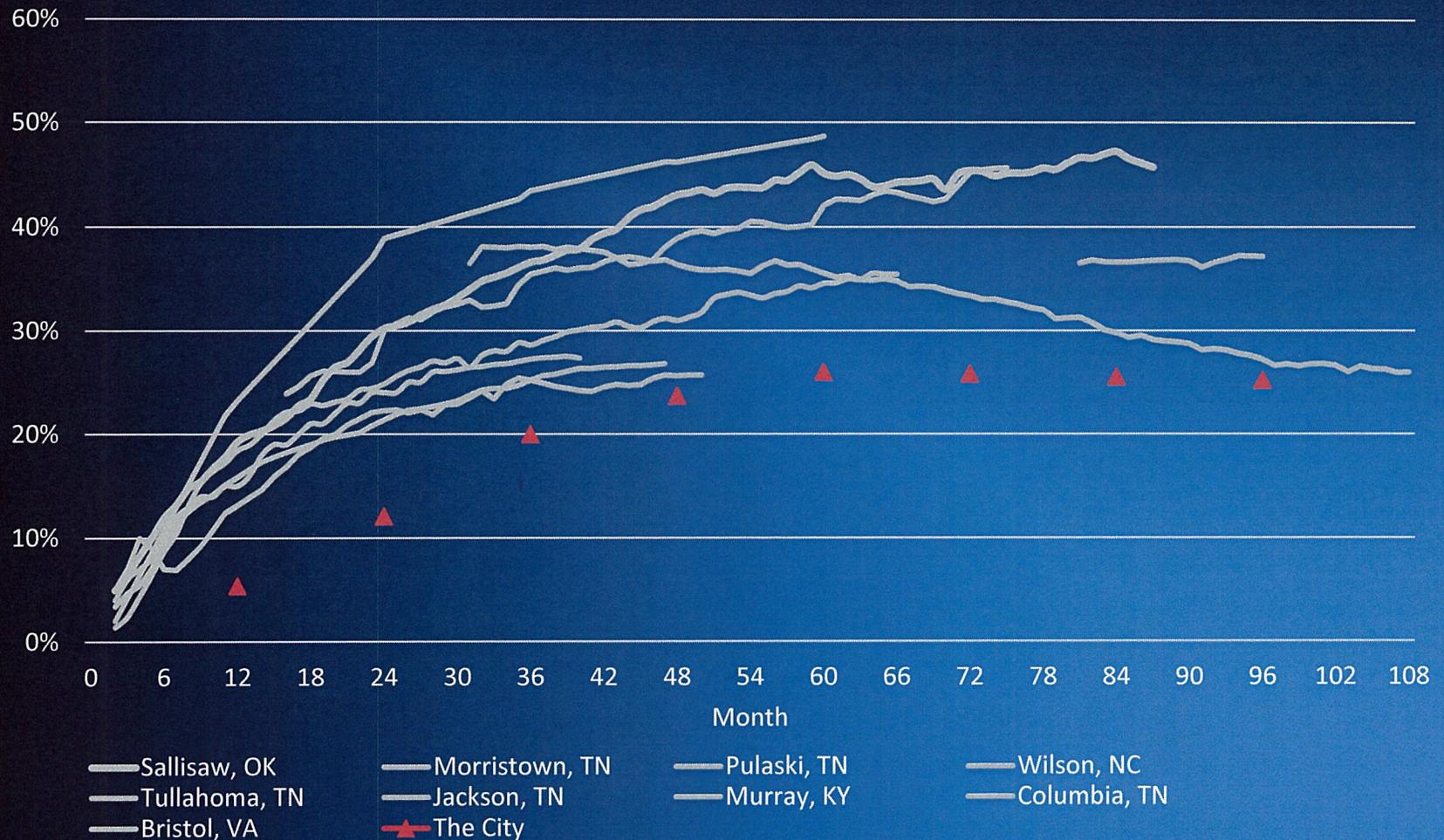


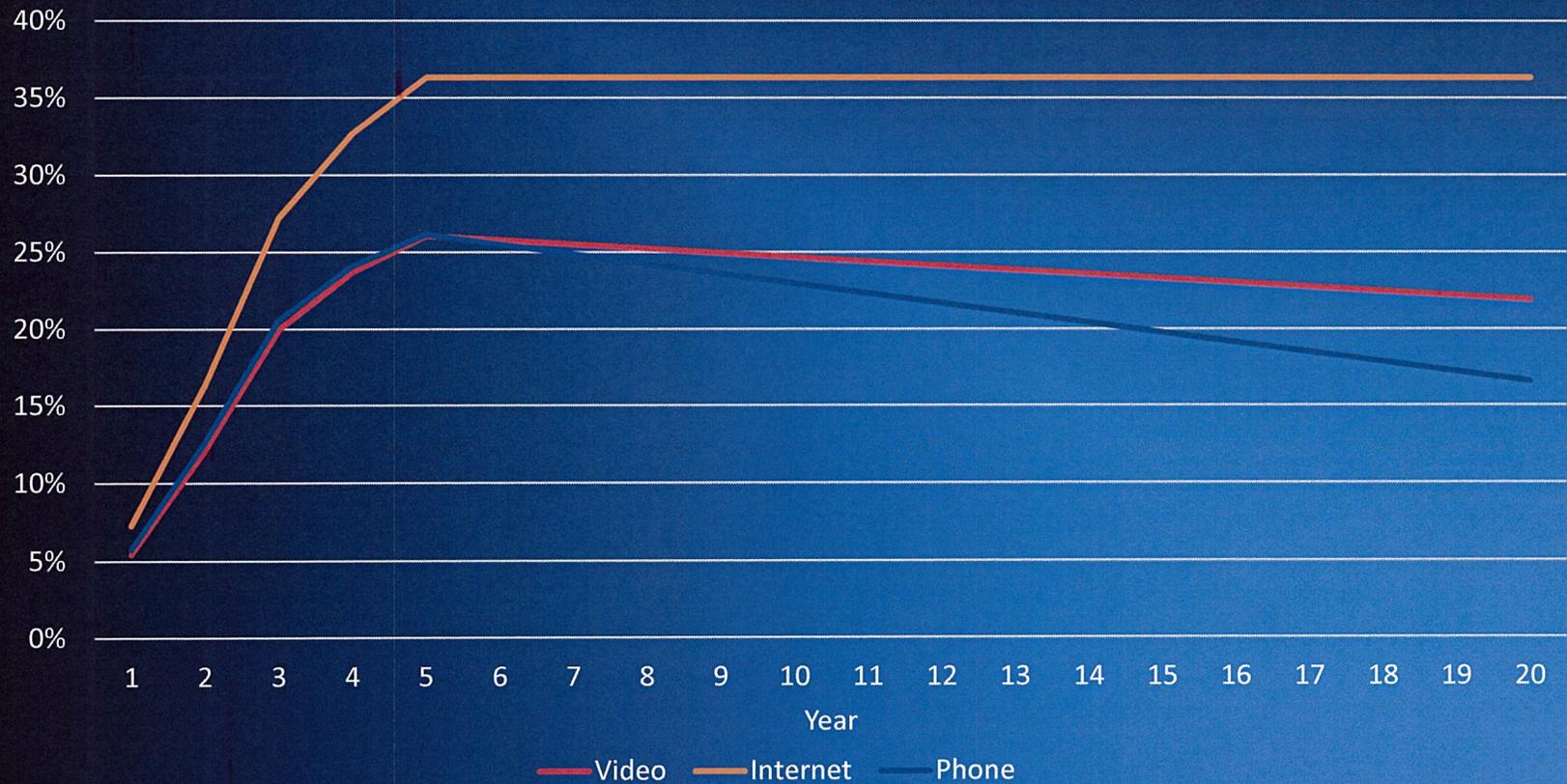
VIDEO PENETRATION OF MUNI OVERBUILDERS

Video Penetration
(By Month Since Launch)



- ◆ Business case projections for voice penetration reflect the quantitative research outcome and reflect ongoing wireless (voice) and OTT (video) substitution...

Service Penetration
(By Year Since Launch)



- ◆ Recognized importance of bandwidth – including symmetrical
- ◆ Much lower wireless substitution rate than national levels
- ◆ Very high rates of dissatisfaction with incumbent providers
- ◆ Strong purchase intent, especially for Internet and Voice
- ◆ Bundling is much higher at 35% (20% in Longmont)
- ◆ Willingness to contribute to funding of the fiber network
- ◆ Preference is for a new provider vs. the City

Services Strategy &
Competitive Assessment



INCUMBENT RESIDENTIAL INTERNET PRICING

	Download	Upload	Price	Technology
TWC	2M	1M	\$15.99	Cable Modem (DOCSIS 3.0)
	3M	1M	\$47.99	
	15M	1M	\$57.99	
	20M	2M	\$67.99	
	30M	5M	\$77.99	
	300M	20M	\$107.99	
AT&T	Up to 768K		\$33.00	DSL
	Up to 1.5M		\$41.00	
	Up to 3M		\$46.00	
	Up to 6M		\$51.00	
	Up to 18M		\$61.00	
WildBlue	12M (10G Cap)	3M	\$49.99	Satellite
	12M (15G Cap)	3M	\$79.99	
	12M (25G Cap)	3M	\$129.99	

Time Warner Cable prices per Services Rates brochure effective September 2014 for Beverly Hills. AT&T rates per att.com effective November 2014. WildBlue rates per wildblue.com effective November 2014.



BH RESIDENTIAL INTERNET PRICING

- ◆ Time Warner Cable has the majority market share and is the competitive benchmark. Target discount level is a minimum of 10%...

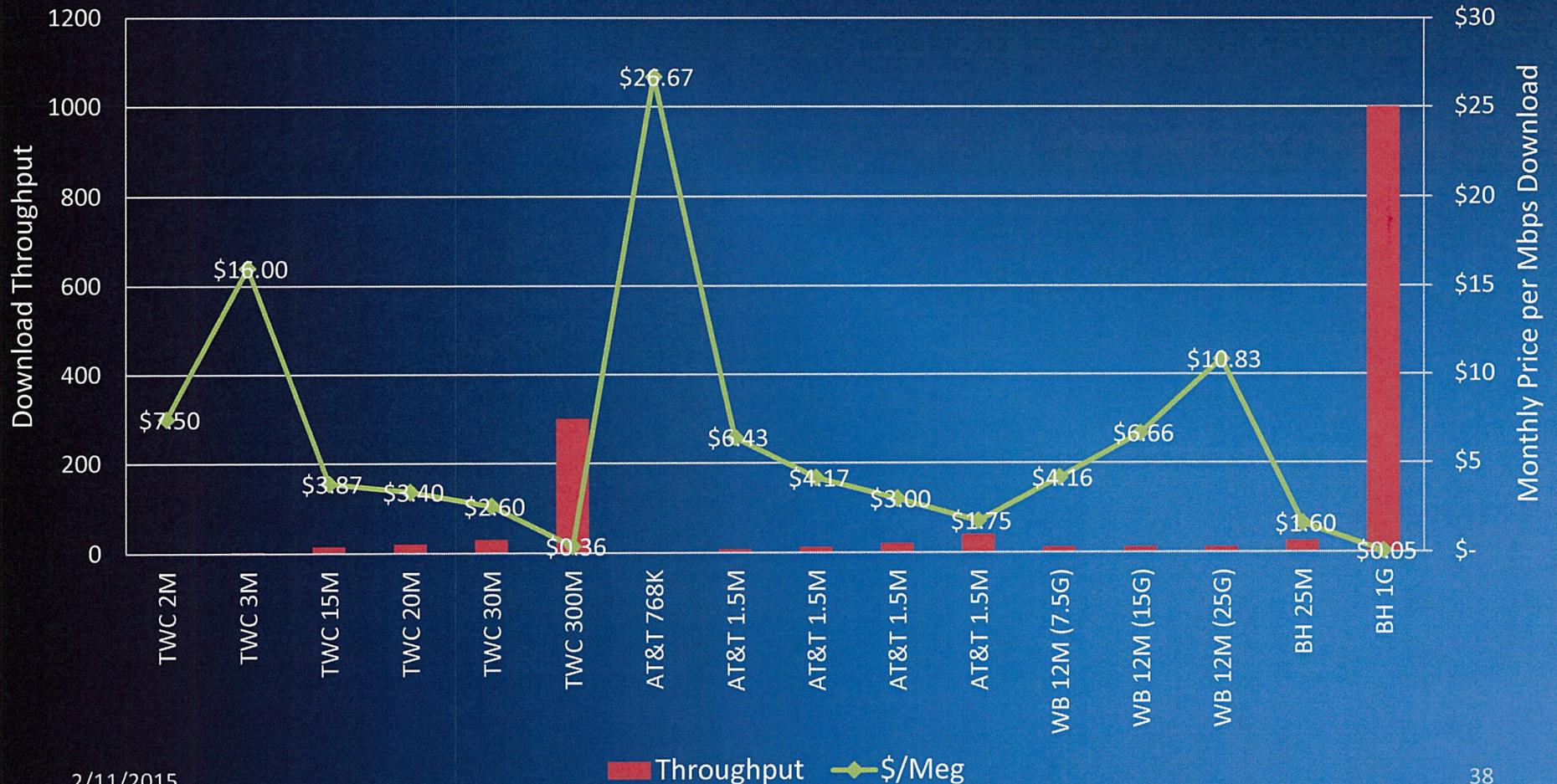
BH Download / Upload	BH Price	TWC Download / Upload	TWC Price	BH Discount
25M / 25M	\$39.95	3M / 1M	\$47.99	20%
25M / 25M	\$39.95	20M / 2M	\$67.99	41%
1G / 1G	\$99.95	20M / 4M	-	-
1G / 1G Charter Member	\$49.95	50M / 10M	-	-

Note: Prices reflect providers single-service Internet rate card pricing.

RESIDENTIAL INTERNET VALUE

- ◆ Current providers are pricing from \$.36-\$27 per Meg for typical residential Internet service. Uptown believes the City could provide retail service as low as \$.05 per Meg...

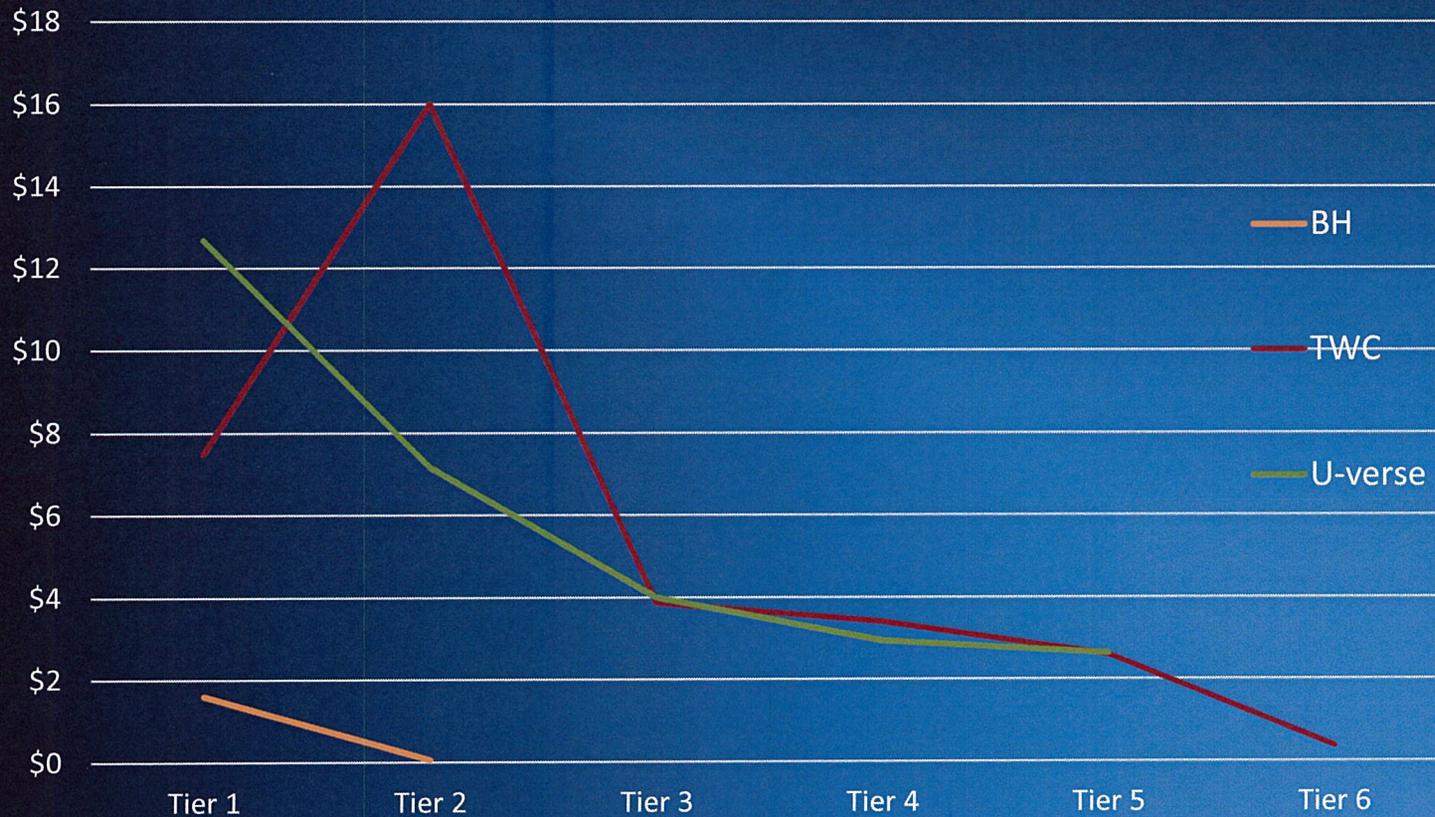
Internet Downstream Throughput and Price per Mbps
(Incumbents and Proposed BH Tiers)



INTERNET VALUE AMONG COMPETITORS

Lower penetration and greater dispersion at higher tiers is reflective of a lack of value being provided at the entry level tiers...

Internet Price Per Meg by Service Tier





INCUMBENT COMMERCIAL INTERNET PRICING

	Download	Upload	Price	Technology
TWC	10M	1M	\$99.99	Cable Modem (DOCSIS 3.0)
	12M	1.5M	\$139.99	
	15M	2M	\$189.99	
	35M	5M	\$299.99	
	50M	5M	\$349.99	
	75M	5M	\$452.99	
	100M	5M	\$518.99	
	100M	10M	\$529.99	
	200M	20M	\$599.99	
	300M	20M	\$649.99	
AT&T	Up to 6M (DSL)		\$40.00	DSL & FTTC
	Up to 12M (FTTC)		\$40.00	
	Up to 18M (FTTC)	-	\$70.00	
	Up to 24M (FTTC)		\$80.00	

Time Warner Cable prices per mystery shopping call in November 2014 for Beverly Hills office location. AT&T rates per att.com effective November 2014.



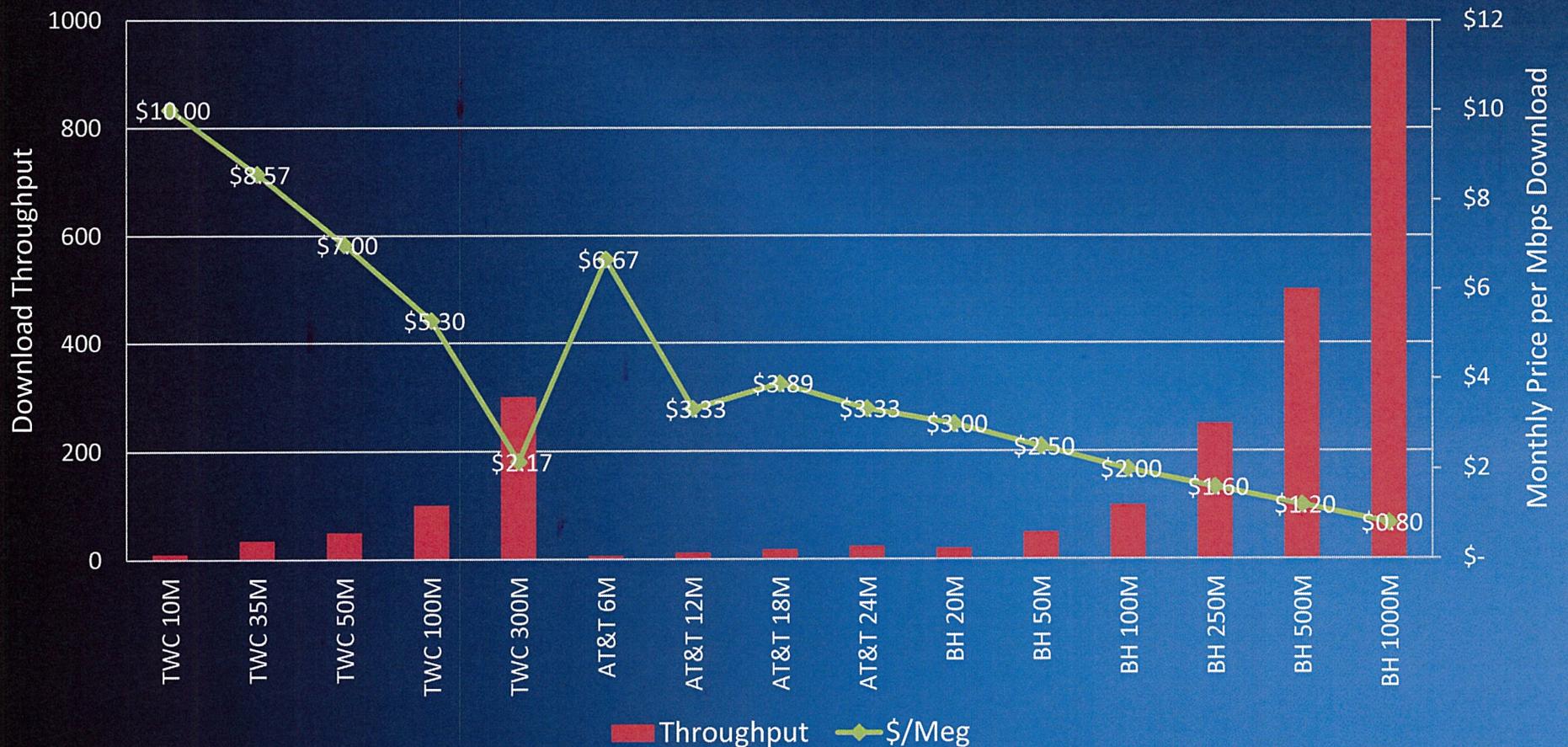
BH COMMERCIAL INTERNET PRICING

BH Download / Upload	BH Price	TWC Download / Upload	TWC Price	BH Discount
20M / 5M	\$59.95	15M / 2M	\$189.99	68%
50M / 10M	\$124.95	50M / 5M	\$349.99	64%
100M / 20M	\$199.95	100 / 10M	\$529.99	62%
250M / 50M	\$399.95	300M / 20M	\$649.99	38%
500M / 250M	\$599.95	-	-	-
1G / 500M	\$799.95	-	-	-

Note: Prices reflect providers single-service Internet rate card pricing.

- ◆ Current providers are pricing from just under \$2 to \$10 per Meg for commercial Internet service. Uptown believes the City could provide retail service below \$1 per Meg...

Internet Downstream Throughput and Price per Mbps
(Incumbents and Proposed LPC Tiers)



Function	Operational Responsibility	BH	CLEC
Capital	Local Loop and Premises NIU	✓	
	Fiber MUX, Transport, and Switch		✓
Interconnect	LNP, Operator Services, PSAP, IC Agreements		✓
Marketing & Sales	Advertising, Sales	✓	
	Brand, Pricing	✓	✓
Provisioning	Work Order Creation	✓	
	Bell Processes		✓
	Switch Provisioning		✓
Billing	Customer Install	✓	
	Bill Fulfillment	✓	
	Call Detail Record (LD), Taxes & Fees		✓
Internet	Backbone Interconnection		✓



RESIDENTIAL VOICE SERVICES

		AT&T	TWC	BH
Packages	Complete Choice Basic <i>(Caller ID & Call Waiting)</i>	\$24.00	\$24.99	-
	Complete Choice Enhanced <i>(11 calling features)</i>	\$28.00	\$43.99 State	\$25.00 ¹
	Unlimited Local & LD	\$35.00	\$44.99	\$28.00 ¹
Access Lines	Additional Line	\$15.00	\$19.99	\$25.00 ¹
Long Distance	Voice 200 (then 7¢/min.)	\$25.00		-
Calling Features	Caller ID, Call Waiting, etc.	Varies	\$3.95 Voicemail	-

¹ Additional \$6.50 Subscriber Line Charge is billed and retained by the City.



COMMERCIAL VOICE EXCHANGE SERVICES (PER LINE)

	Service	AT&T	TWC	BH
Access	Access Line	Monthly: \$60	-	-
Line & Feature Packages	Access Line & Feature Package	Monthly: \$60 / \$40 ¹ 1 Year: \$45/ \$34 3 Year: \$43/ \$32	-	-
	Access Line and Caller ID	Monthly: \$55/ \$35 ² 1 Year: \$40/ \$29 3 Year: \$38/ \$27	-	-
Line, Features, & Unlimited LD			\$34.99 1 st Line \$29.99 Addl. Lines	Monthly: \$34.95 2 Year: \$32.95 3 Year: \$29.95
Long Distance	Unlimited Domestic	\$20 (\$15 for Business Choice Subscribers)	-	-
	Per Minute Plans (BOT)	\$.04 - \$.05 /min. (Varies by package minutes)	-	-

¹ AT&T CompleteChoice Option A with Caller ID, 3 Way Calling, and CF. ² AT&T CompleteChoice Option B with Caller ID.



COMMERCIAL VOICE NETWORK SERVICES

	Service	AT&T	BH <i>(3 Year Contract Required)</i>
PBX	Analog Trunk (RG 3)	Tariff: \$65	Per Channel (1-8): \$27.95 Per Channel (9+): \$24.95
ISDN	Primary Rate Interface Access / Per B Channel (23B+D)	Monthly: \$180 / \$95 1 Year: \$135 / \$55 2 Year: \$130 / \$53 4 Year: \$120 / \$50	Per ISDN Line: \$100 Per 'B' Channel: \$24.95



VOICE ARPU

		BH Retail	Wholesale Rate	BH Share	Dispersion	SLC	ARPU
Residential	Unlimited local & LD	\$28.00	\$10.00	\$18.00	100%	\$6.50	\$24.50
Commercial (Unl. LD)	Business Package (Monthly)	\$34.95	\$12.00	\$22.95	40%		-
	Business Package (2 Year)	\$32.95	\$12.00	\$20.95	20%		-
	Business Package (3 Year)	\$29.95	\$12.00	\$17.95	40%		-
	Total Commercial					\$6.50	\$27.05



BH PROPOSED BUNDLES

		<i>Video + Internet</i>	<i>Internet + Voice</i>	<i>Video + Internet + Voice</i>
Residential	Services	Expanded Basic 1G Internet	1G Internet Unlimited Local/LD	Expanded Basic 1G Internet Unlimited Local/LD
	Rate Card	\$119.90	\$77.95	\$147.90
	Discount	-	-	(\$8.00)
	Bundle Price	\$119.90	\$77.95	\$139.90



DIRECTV VIDEO PACKAGES

Package	Programming Tier	Package Features	Price (Year 1)	Price (Year 2)	Price (Year 3+)
Entertainment	Expanded Basic	140 channels 1 HD/DVR	\$29.99	\$34.99	\$54.99
Choice	Digital Basic	150 channels 1 HD/DVR	\$34.99	\$43.99	\$63.99
Choice Xtra	Digital Basic Sports Tier	210 channels 1 multi-room HD/DVR NFL Sunday Ticket	\$39.99	\$48.99	\$68.99
Choice Ultimate	Digital Basic Sports Tier 1 Premium	225 channels 1 multi-room HD/DVR NFL Sunday Ticket Some premium channels	\$44.99	\$54.99	\$74.99
Premier	Digital Basic Sports Tier 4 Premiums	285 channels 1 multi-room HD/DVR NFL Sunday Ticket All premium channels Specialty sports channels	\$89.99	\$99.99	\$119.99

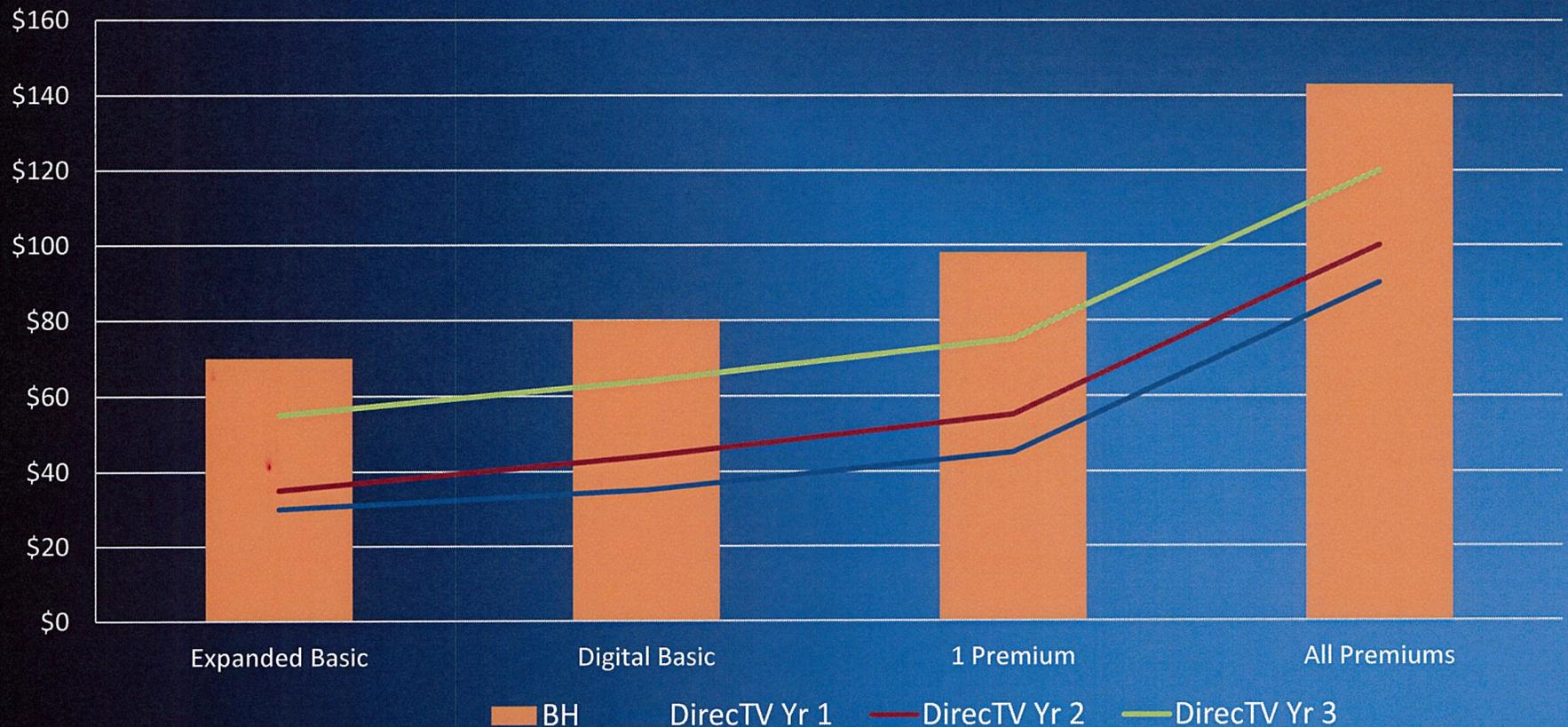


VIDEO COMPETITION

<i>Service Package</i>	<i>BH</i>	<i>TWC</i>	<i>U-verse</i>	<i>Discount to TWC</i>
Basic	\$29.95	\$30.25		0%
Essential TV (LB+40)	-	\$57.74		-
Expanded Basic	\$69.95	\$78.24		11%
Digital Basic	\$79.95	\$84.49	Not Available (Reselling DirecTV)	5%
Digital Tiers	\$8.00 each	\$8.00 each		
Premiums	\$18.00 each	\$15.00 each		
DB + 2 Premiums <i>\$2 discount</i>	\$113.95			
DB + 3 Premiums <i>\$5 discount</i>	\$128.95			
DB + 4 Premiums <i>\$9 discount</i>	\$142.95			
Primary /Addl. STB Fee HD/DVR	\$9.95 / \$9.95	\$11.25 / \$12.75		
DVR Fee/Whole Home DVR	\$10.00	\$12.99/\$19.99		

- ◆ TWC has the majority of video market share in Beverly Hills and should be the pricing benchmark. Competing with DirecTV on price is not recommended...

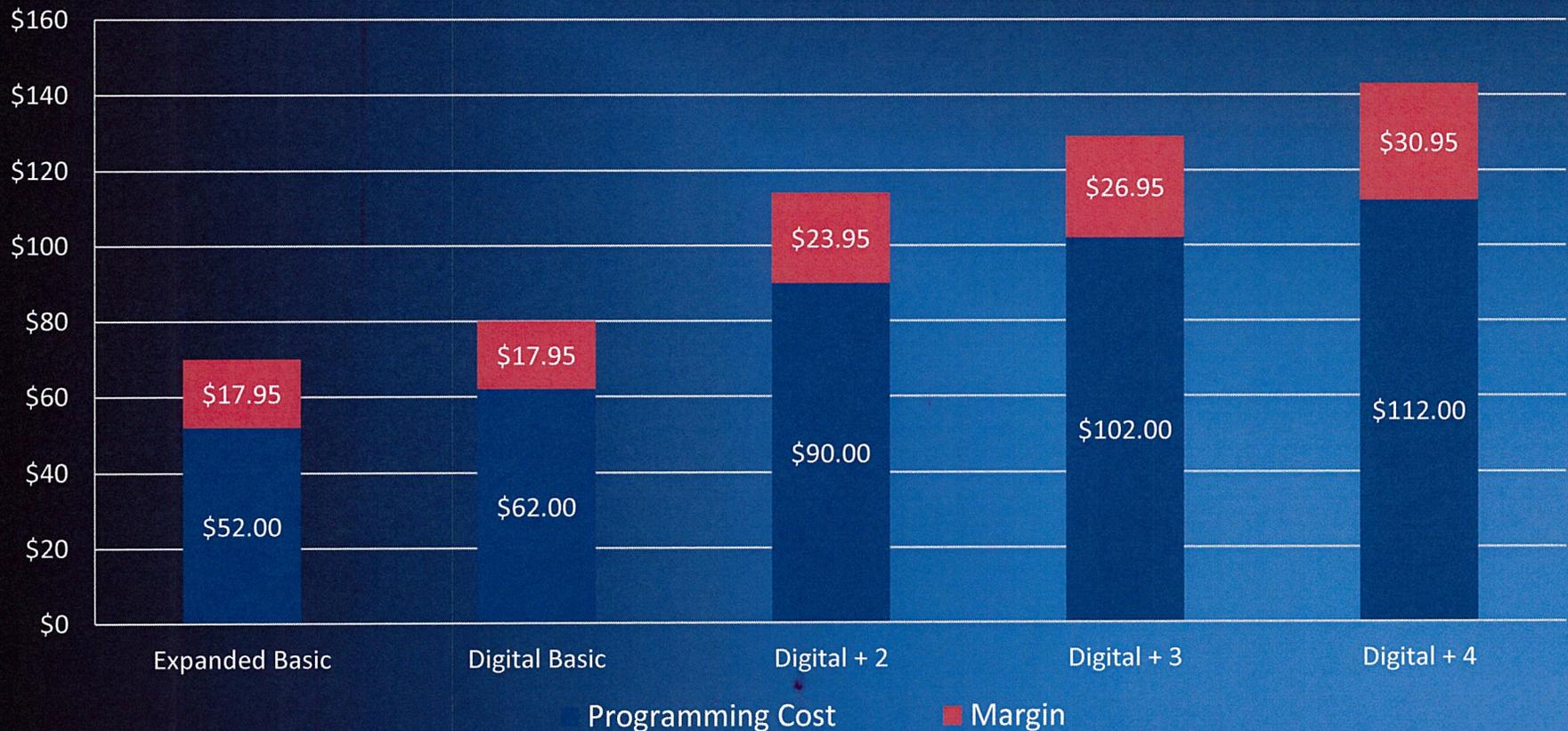
Price Comparison Between BH and DirecTV
(BH Rates and DirecTV Rates)



- ◆ Essentially three sources for an operator to contract for programming
 - ❖ NCTC (National Cable Television Cooperative)
 - ❖ Direct deals
 - ❖ Other Content Aggregators (NRTC, NTTC, etc.)
- ◆ The NCTC has resolved its conditional membership moratorium on overbuilders and is the best contracting source for NCTC programmers (approximately 70% of the lineup). Direct deals are used to secure remaining non-NCTC content.
- ◆ Broadcast channels now require cash 'consideration' in granting retransmission consent and are also included in the cost metrics.
- ◆ Baseline financials will use NCTC supplemented by direct deals. Retransmission consent cash will also be included.

- ◆ Video gross margin will initially be 21-26% and substantially lower than the 40-50% margin we estimate the major MSO's are generating...

Price and Programming Cost by Video Service
(Proposed BH Video Services)



Technology Strategy

- ▣ Why FTTP?
 - Gold standard for local broadband services distribution
 - Technology is far superior to any other option now and in the future
- ▣ Gigabit Passive Optical Network assumed for new network
 - 2.4 Gbps down / 1.2 Gbps up
 - GPON commercially available from multiple suppliers
 - Mature technology with millions of units shipped
- ▣ GPON architecture using distributed split
 - 1:4 and 1:8 splitters deployed in distributed split network
 - Each 1:4 splitter (primary) connects to four 1:8 splitters (secondary)
 - Eliminates splitter cabinets and reduces splicing and fiber counts
 - System reach is 20 km from GPON equipment (OLT) location
- ▣ FTTP outside plant comprises the largest capital cost

EXISTING COMMUNICATIONS INFRASTRUCTURE

▣ Fiber Backbone

- Approximately 27 miles of conduit throughout the city
- Connects to most key City facilities
- Fiber cable sizes are relatively small (< 96 fiber cables)
- Primary value is the spare innerduct available for new cable

▣ Core Network

- Moving to Juniper MLX10 Routers operating at Layer 2
- 10G ring connecting 11 City owned sites
- Two Layer 2 switches at each site to support multiple sub-rings

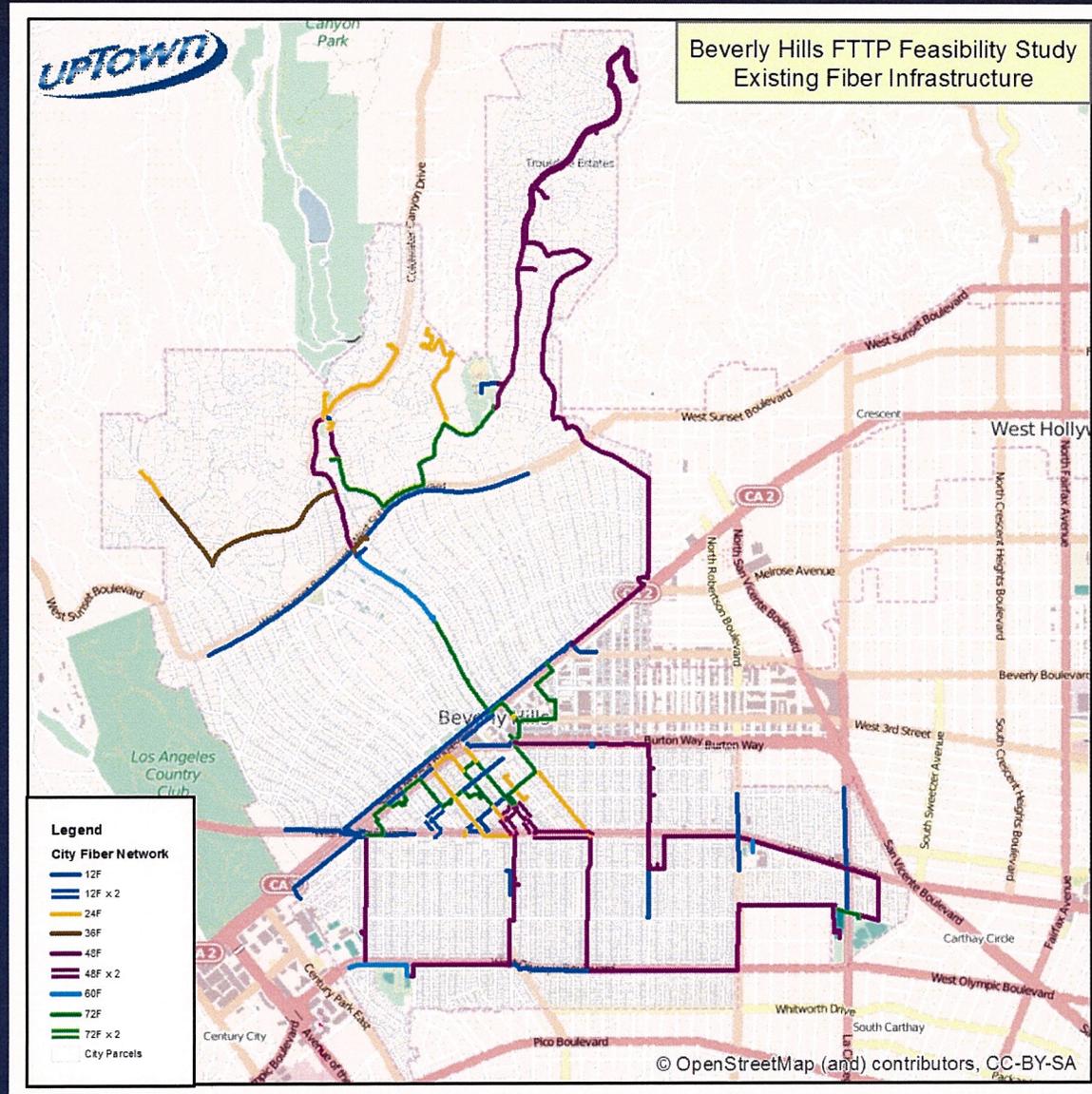
▣ Internet connectivity

- Routes through Metro Ethernet to 600 West 7th
- Internet connection through XO (1Gig)

▣ Applicability to FTTP

- Spare conduit can be used to interconnect FTTP equipment sites
- New MLX10s could be used to support future FTTP requirements

CITY FIBER OPTIC INFRASTRUCTURE



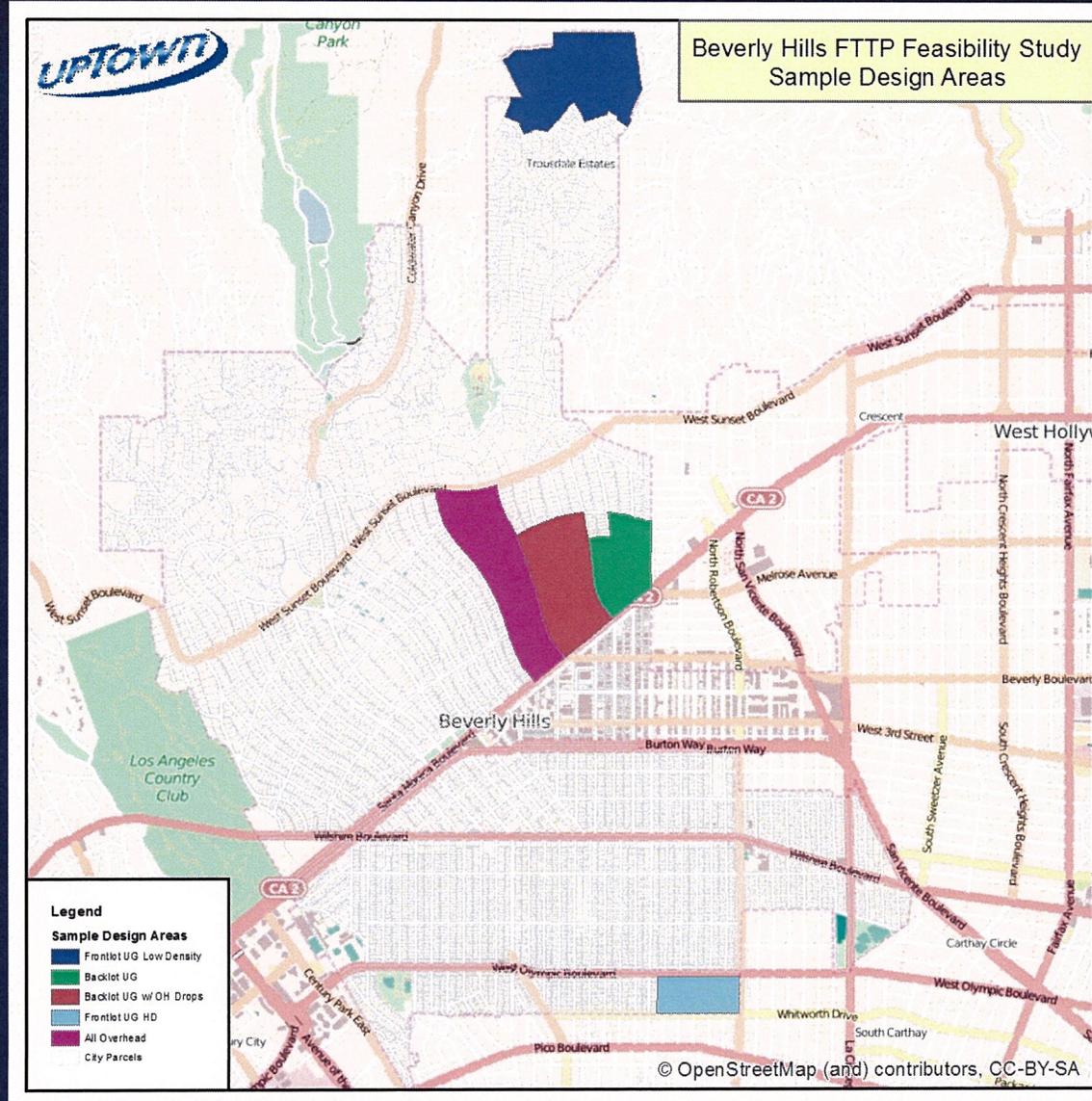
Sample Designs



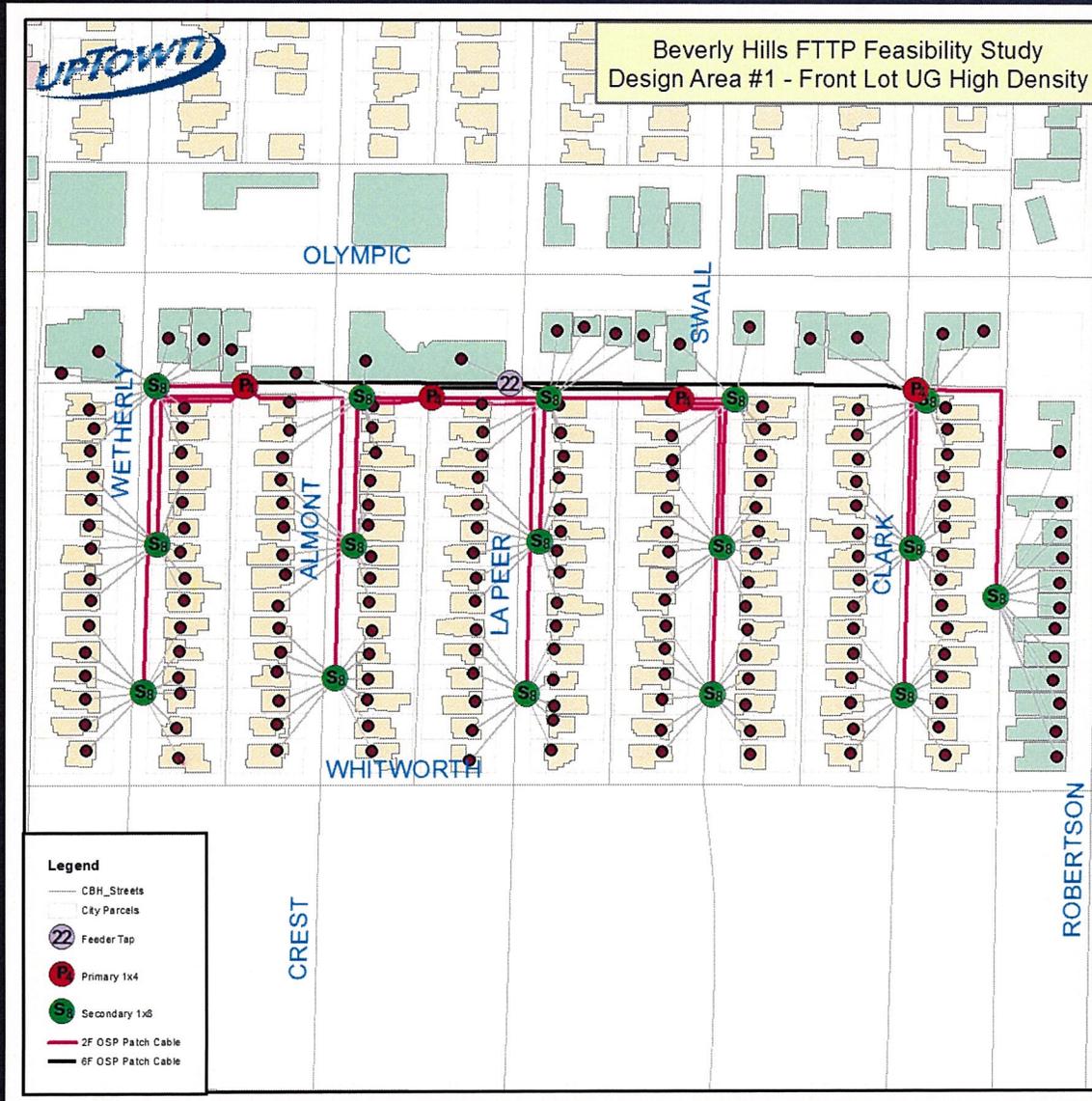
UPTOWN CAPITAL BUDGETING APPROACH

- ▣ Capital budget accuracy is critical
 - Funding estimates need to be close to what will actually be used
 - Unexpended bond amounts can cause arbitrage issues
 - Underfunding raises credibility issues with investors in latter rounds
- ▣ Uptown draws on many sources for each capital budget
 - Local contractor labor rate survey
 - Actual bid results from our latest FTTP implementations
 - Our role as the engineering firm for five other FTTP systems
 - Ongoing pilot projects and studies for other clients
- ▣ Sample designs are primary source for each study
 - Uptown selected representative areas
 - Five neighborhood designs completed including 794 passings
 - Single family home neighborhoods
 - Front vs. back lot, high vs. low density and aerial vs. underground
- ▣ Uptown used conservative assumptions for this process

SAMPLE DESIGN AREA OVERVIEW



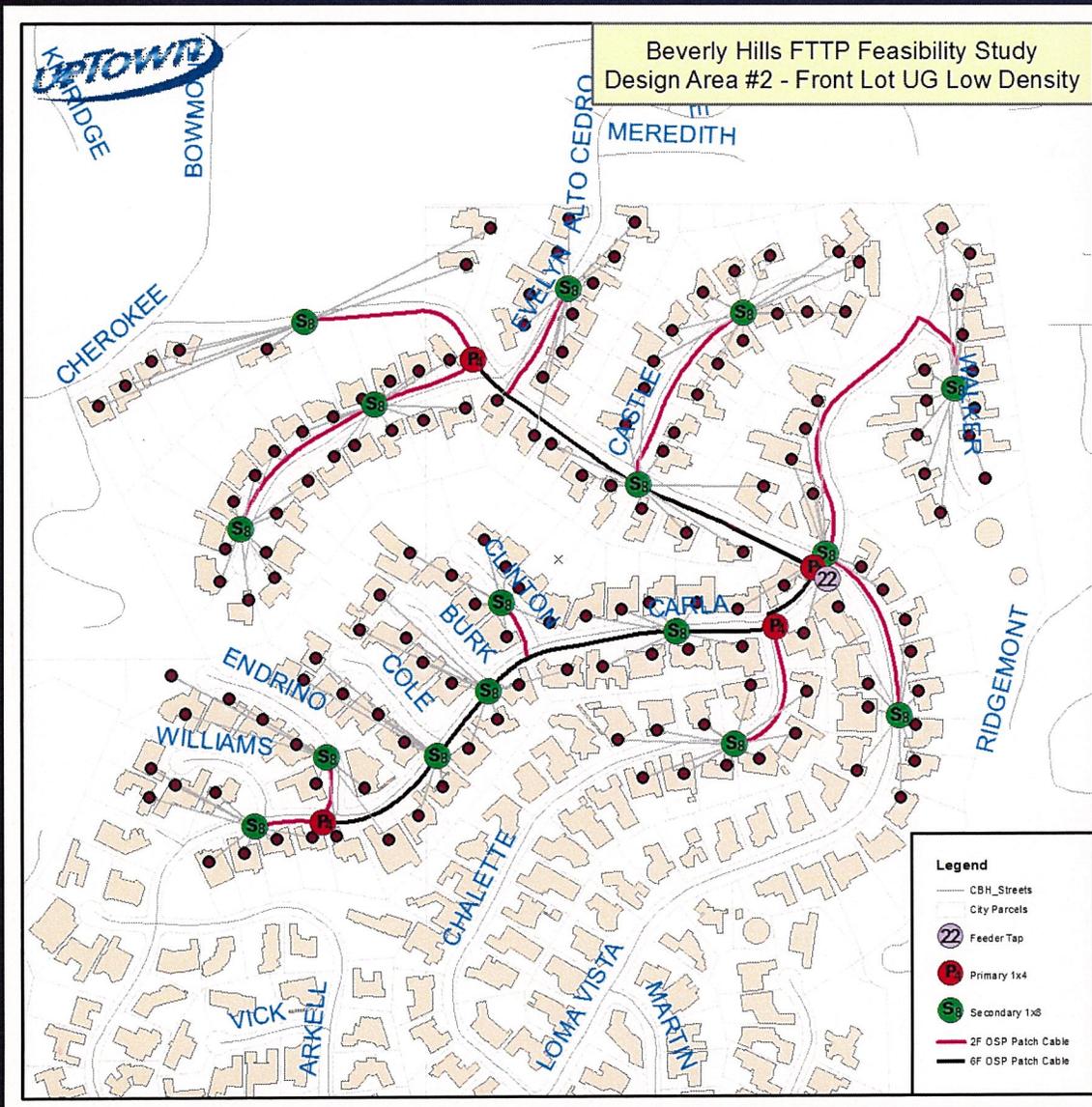
AREA #1 - FRONT LOT UNDERGROUND HIGH DENSITY



Design Metric	Value
Aerial Plant Miles	0.0
Underground Plant Miles	1.3
% Aerial	0%
% UG	100%
Passings	180
Passings per Mile of Plant	139
Materials Cost per Passing	\$131
Labor Cost per Passing	\$1,029
Total Cost per Passing	\$1,160
Total Materials (no drops)	\$23,528
Total Labor (no drops)	\$185,225
Total Cost	\$208,753

* - Does not include engineering, fixed equipment, subscriber capital and installation costs.

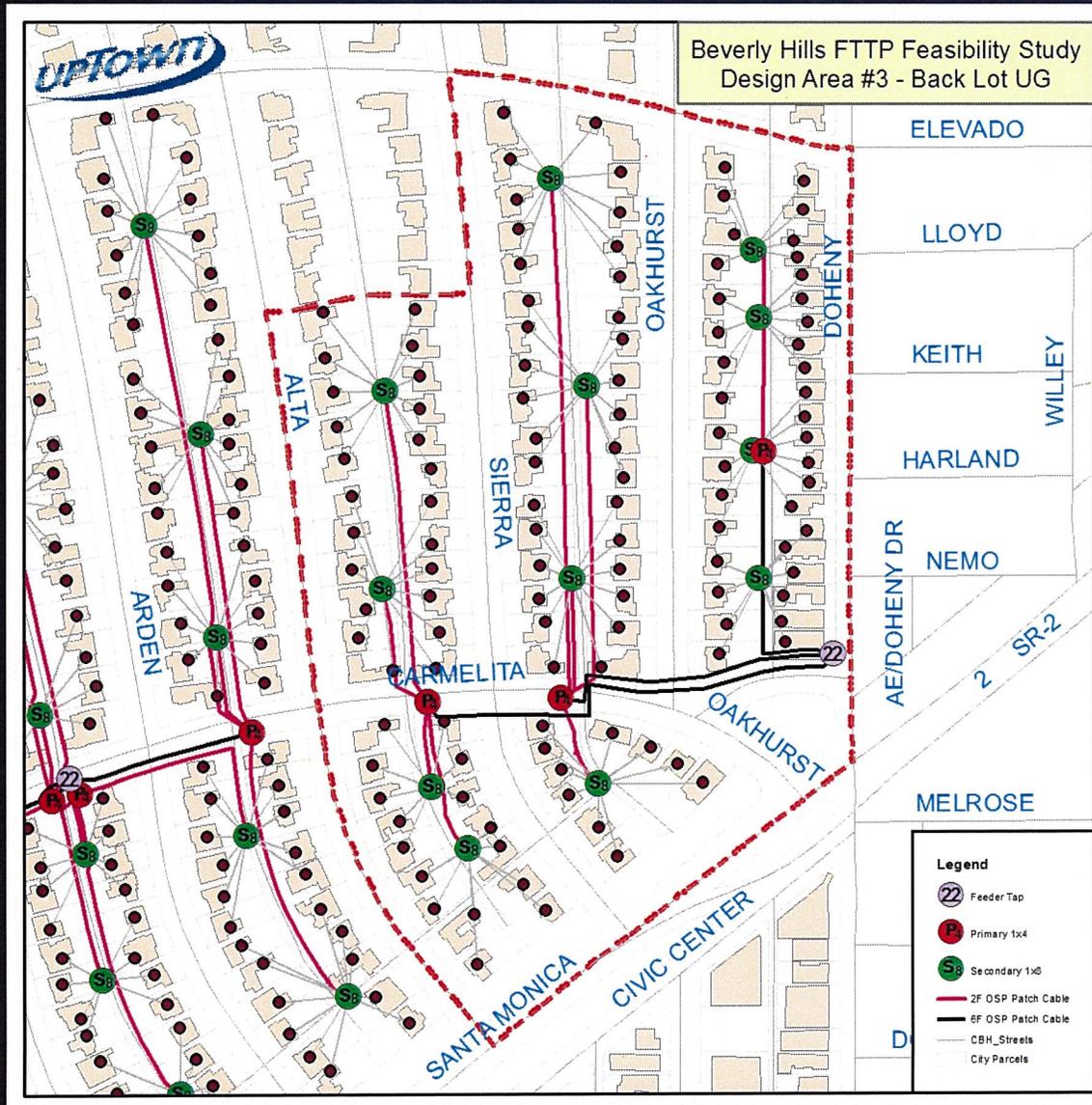
AREA #2 - FRONT LOT UNDERGROUND LOW DENSITY



Design Metric	Value
Aerial Plant Miles	0.0
Underground Plant Miles	2.9
% Aerial	0%
% UG	100%
Passings	155
Passings per Mile of Plant	53
Materials Cost per Passing	\$226
Labor Cost per Passing	\$2,588
Total Cost per Passing	\$2,813
Total Materials (no drops)	\$34,988
Total Labor (no drops)	\$401,087
Total Cost	\$436,075

* - Does not include engineering, fixed equipment, subscriber capital and installation costs.

AREA #3 – BACK LOT ALL UNDERGROUND (UG)



Design Metric	Value
Aerial Plant Miles	0.0
Underground Plant Miles	1.5
% Aerial	0%
% UG	100%
Passings	120
Passings per Mile of Plant	81
Materials Cost per Passing	\$176
Labor Cost per Passing	\$3,304
Total Cost per Passing	\$3,480
Total Materials (no drops)	\$21,125
Total Labor (no drops)	\$396,425
Total Cost	\$417,550

* - Does not include engineering, fixed equipment, subscriber capital and installation costs.