

# Broadband Rate Design for Public Benefit

The transition from service-based rates to loop rates on  
Chelan PUD's Broadband Network

Dec.19, 2016

No action required today

# Today's Presentation

- Loop Rates
  - Final item from 2012 Fiber Strategic Plan
  - Encourages service providers to offer low-cost packages for light users
  - Allows revenue management as bandwidth growth changes
- Other rate changes
  - New services
  - Service enhancements
  - Market adjustments

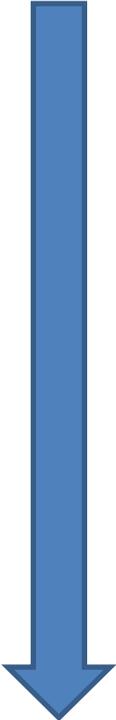
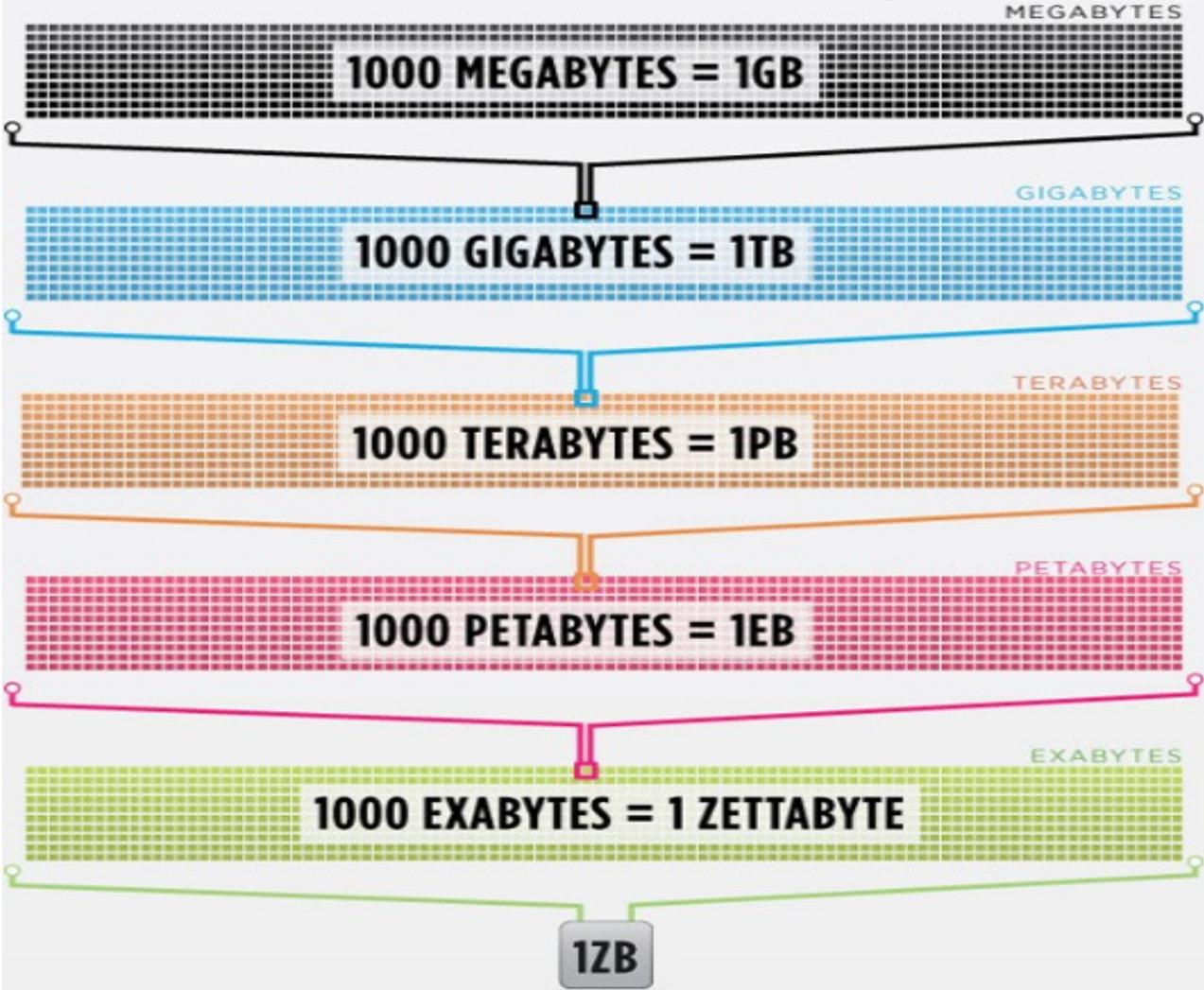
# Philosophy

- Simplify rates and align costs with drivers by charging based on a “measured usage” component
- Provide an incentive to Service Providers to reach more homes and businesses than today
- Support revenue at current levels and grow revenue as usage requires additional investment

# What's happening with bandwidth?

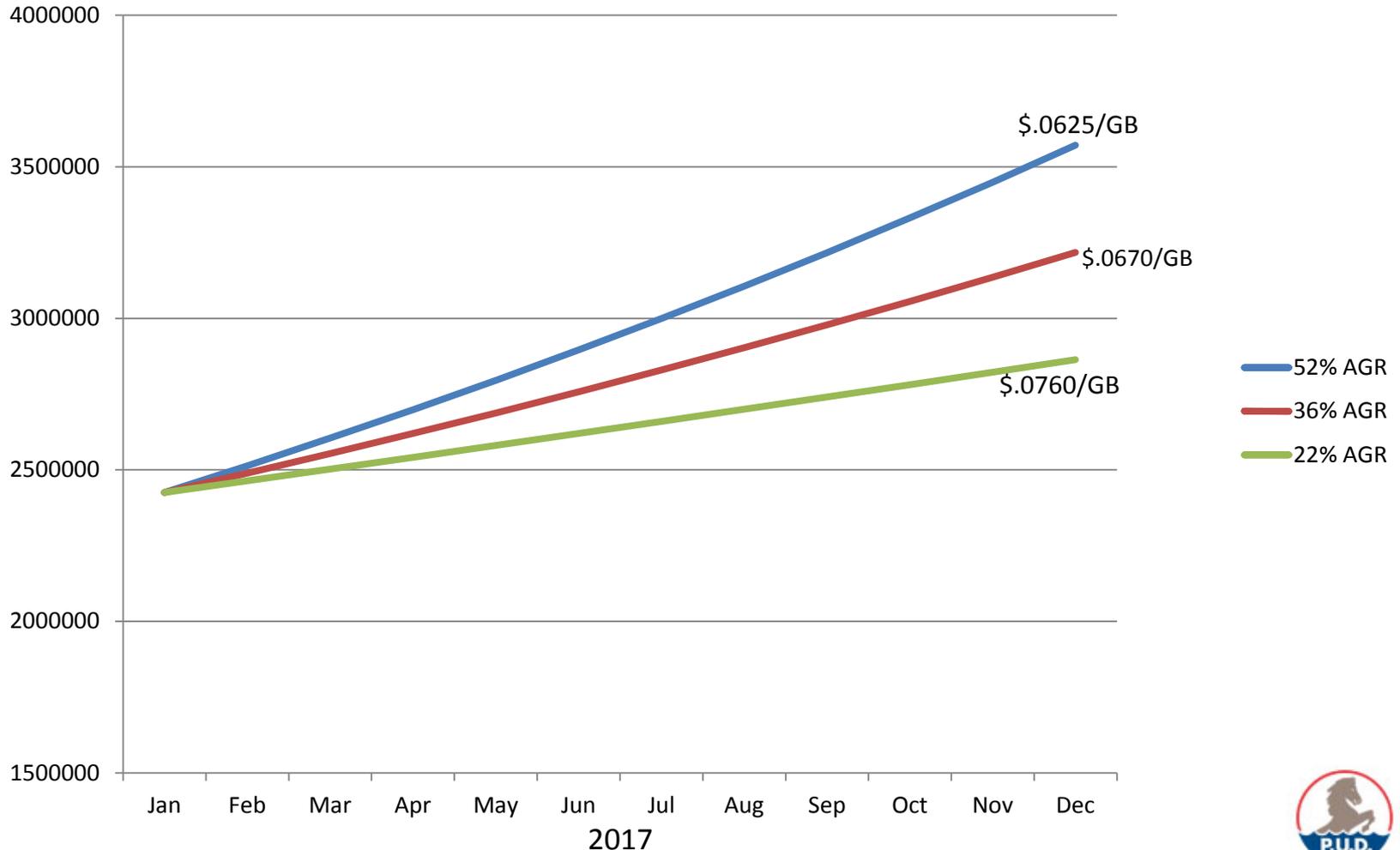
- Annual Global IP traffic surpassed the zettabyte (ZB) threshold in 2016
  - It took 26 years
  - Predicted to only take 3 more years to hit 2 ZB
- Cisco predicts video traffic will be 82 percent of residential traffic by 2020. Much of this video is going to come from cell phones (but will still use landline WiFi networks).

# What is a Zettabyte?



# 2017 Internet Bandwidth Forecast

GB/Month



\*AGR=Annual Growth Rate

# Rate Design for Digital Local Loops

- Revenue recovery is based on two parts:
  - Fixed loop rate
  - Aggregated Bandwidth rate (Measured Usage)

# An Example

- 100 x 10 Mbps Digital Local Loop
  - Monthly rate \$12.00
  - Aggregated Bandwidth Rate \$.0500-.1050/GB
- 1 Gbps x 100 Mbps Digital Local Loop
  - Monthly Rate \$36.00
  - Aggregated Bandwidth Rate \$ .0500-.1050/GB

\*Mbps = Megabits per second (Speed)

GB = Gigabyte (Capacity)

# Rate Methodology

- Variability of bandwidth growth requires a rate range from \$.0500 to \$.1050 to produce consistent revenue from bandwidth component
- This rate range tolerates an annual bandwidth growth from -13% to 83% (expected is 36%)
- This continues bill stability for the service providers

# Rate Methodology - Details

- Bandwidth revenue requirement is calculated to maintain overall revenue neutrality from core services for the District in 2017
- Bandwidth is forecasted quarterly and billed on average monthly rate
- Change in bandwidth growth rate is adjusted quarterly to capture variation from forecast
- Aggregated Bandwidth Rate to produce target bandwidth revenue is calculated quarterly based on this updated forecast

# Rate Methodology – Details

- Rates will change through time to maintain revenue neutrality
- If investment in the Broadband Network requires the forecasted revenue requirement to go up, we will come back to the Commission for a rate increase

# Proposed Changes to Other Rates

- Technology standard updates to Virtual Local Area Network (VLAN): advanced services
- Lower VLAN rates to competitive market levels
- 10% Increase on Dark Fiber rates
- Introduce new Fiber services (Wave Division Multiplexing - Lambda Services) as a price competitive alternative to Dark Fiber
- Add one-time Nonrecurring Charge (NRC) for provisioning Quality of Service (QoS) for IP-TV and Voice over Internet Protocol (VoIP)

\* Wave Division Multiplexing (WDM) is a technology which multiplexes a number of optical carrier signals onto a single optical fiber by using different wavelengths (i.e., colors) of laser light.

# Proposed Changes to other Rates

- Introduce a new rate for IP-TV
- Plain Old Telephone Service (POTS) rates will be reduced
- Include Non-recurring Fees and Charges schedule with Rate Schedule for clarity

# Summary

- Loop Rates
  - Final item from 2012 Fiber Strategic Plan
  - Encourages service providers to offer low-cost packages for light users and those who cannot afford standard packages
  - Allows revenue management as bandwidth growth changes
- Other rate changes
  - Addition of new services
  - Service enhancements to VLANs
  - Market adjustments to maintain competitiveness

# Next Steps

- Draft resolution presented on Jan. 3, 2017
- Resolution presented for Board action on Jan. 16, 2017
- If approved, rates, fees and charges will be effective March 1, 2017

## Questions?