

# Trans-Pacific Express Cable Network

Presented by Verizon Business

October 2008

# TPE Overview

## System Configuration

- 4-fiber pair cable
- Design capacity: 5.12 Tbps (128 wavelengths per fiber pair)
- Initial equipped capacity: 1.28 Tbps (32 wavelengths per fiber pair)
- Length: approximately 18,000 Km/11,000 miles
- Configuration: Linear Trans-Pacific route with Intra-Asia ring
- System design life: 25 years



### Basic Configuration:

- Cables from four Asian Terminals (two landings in China, one each in Korea and Taiwan) are brought together via branching units (BU) forming an intra-Asian ring
- A single, 4-fiber pair cable connects to a branching unit and crosses the Pacific to the U.S. landing station at Nedonna Beach, Oregon

- **Benefits**

- Provides critical cable diversity to reduce service restoration times in the event of a disaster
- Reduce latency (time delay) in U.S.-Asia data transmission
- Provide the shortest reliable Trans-Pacific route allowing direct connection between a U.S. landing station and North Asian landing stations
- Utilizes Dense Wavelength Division Multiplexing (DWDM) technology @ 10Gb per wavelength(121,000 simultaneous phone calls)

- **Initial parties are:**
  - Verizon Business
  - Korea Telecom
  - China Telecom
  - China Netcom
  - China Unicom
  - Chunghwa Telecom (Taiwan)
- **Additional Parties:**
  - AT&T
  - NTT

- **Project Highlights**
  - In Service as of September 30, 2008
  - Cable manufactured in 4 different manufacturing facilities located in US, Japan, France.
  - 7 cable ships used for cable installation during the period September 2007-April 2008

## Oregon Benefits for TPE; WHY Oregon

- State Government Support
- Established permit procedures with knowledgeable/supportive permit authorities
- OFCC-established liaison group with commercial fisheries
- WCIC Infrastructure
  - Existing Beach Manhole
  - Existing cable station @ Nedonna Beach
  - 150 miles of existing conduit to be utilized for cable placement from Nedonna Beach to Hillsboro
- Existing Verizon Terminal Station in Hillsboro connecting to domestic US communications infrastructure

# Gov. Kulongoski Support



THEODORE R. KULONGOSKI  
Governor

January 16, 2005

To: Delegates of Pacific Telecom Conference

Oregon is open for business.

We welcome your interest in Oregon and our established process for landing undersea cables on the Oregon Coast. Oregon has a great track record for placement of cables, related facilities, and operations centers. Oregon's fishing industry has worked closely with members of the submarine cable industry to achieve a high level of successful cable burial and to promote cable safety within the fishing fleet once a cable has been placed.

As chair of the State Land Board, which must approve easements for cable landings on the coast, I can assure you that we welcome, and will continue to give full and speedy consideration to, all future requests.

I also can assure you that staff from the Department of State Lands, the Oregon Economic and Community Development Department and other involved state agencies will work in partnership with submarine cable companies and the Oregon fishing fleet.

We stand ready to assist you in whatever your needs may be. Working together is the best way to keep this unique partnership healthy and strong.

Sincerely,



THEODORE R. KULONGOSKI  
Governor  
State Land Board Chair

TRK/art

# Oregon based support

## Local Companies providing support:

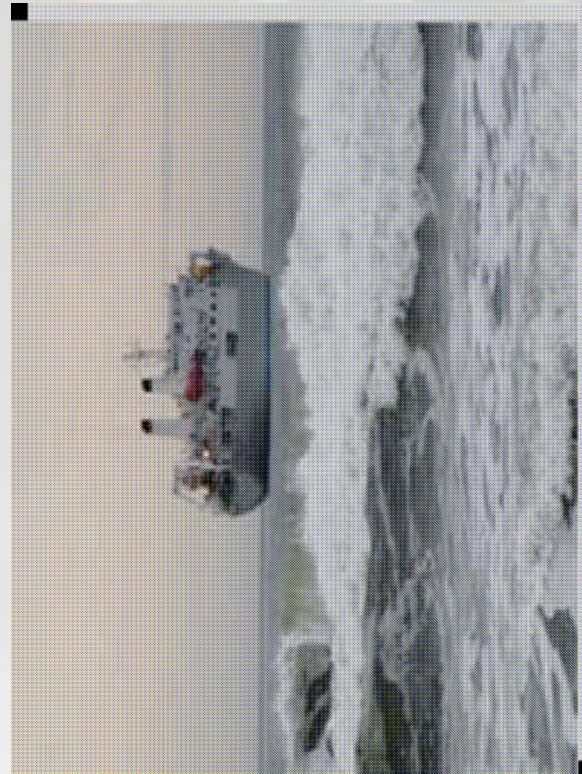
- OFCC
- WCIC
- Ibis Group
- North Sky Utilities

## State Government support

- Port of Tillamook Bay
- Oregon Dept of State Lands
- Oregon State Parks
- Oregon Economic & Community Development Dpt.
- City of Rockaway Beach
- Tillamook County

# Oregon Landing

- Cable landed in Oregon on November 14, 2007



# Oregon: Gateway to the Pacific and more

## Submarine Cables and Oregon

- 3 cable systems providing connection to Alaska
- 3 cables providing connectivity to Japan
- 2 cables providing connectivity to China
- 1 cable providing connectivity to Australia

Collectively these cables along with others in Asia create multiple paths to all of Asia and India and ultimately provide a ring around the world utilizing Mediterranean and Atlantic cables

# Oregon and future cables

- Attractive to future cables for the same reasons I have presented today along with:
- Existing cable stations
- Established domestic fiber infrastructure providing connectivity to the rest of the US
- Growth of data farms in the PNW

Future concerns: Close coordination between agencies and submarine cable operators during the planning stage to mitigate any concerns associated with alternative energy projects such as wave generation and wind farms which has the potential to impact submarine cable maintenance and routing of future cables