



Oregon Coastal Notes

Oregon Coastal Zone Management Association

February 2010

Oregon's Digital Divide: A Coastal Perspective — Onno Husing, Director, OCZMA



Years from now, the election of President Barack Obama may be seen as a game-changer in telecommunications in the United States—at least for Rural America. During the 2008 presidential campaign, candidate Obama repeatedly underscored the importance of reaching all Americans with high speed Internet.

During 2009, the “stimulus package” (the American Recovery and Reinvestment Act (ARRA)) included \$7.2 billion dollars to build-out broadband networks in the United States.

The scent of federal grant money brought a lot of people/companies out of the woodwork. Recently, finally, the first wave of grants were awarded. In a perfect world, inventories or maps documenting the location of unserved and under-served communities in the United States would have been in place to guide ARRA investments. Alas, for most of the country, that information doesn't exist (at least in the public domain).

The good news is, under ARRA, millions of federal dollars are being made available to states to do broadband mapping projects. This national-scale mapping/inventory effort, carried out by states (hopefully, with strong local involvement) could be transformative. Here's why we believe this initiative is so important.

In 2005, OCZMA helped launch a successful two-county regional broadband mapping initiative in Curry County, Oregon and Del Norte County in California. The project: (a) triggered private sector infrastructure investments in that region, and (b) impacted how Oregon will do its broadband mapping program. Leaders in those counties experienced the empowerment that comes from having the right information at the right time—information that induced private sector investments in their communities.

It's a compelling story that's highly relevant to leaders in Rural Oregon. At the local level, let's do everything we can to support the State of Oregon's broadband mapping effort to make it an unqualified success.

Download this newsletter from OCZMA's web site: www.oczma.org

It's About Connectivity!

It was October 2005 in Bend, Oregon at the Oregon Connections Telecommunications Conference (www.oregonconnections.info). I was giving a talk about OCZMA's *Coastal Telecommunications Strategy*. The people attending those conferences are, for the most part, telecommunications professionals and local government officials with a strong interest in telecommunications. More than anybody, they understand the transformative power of the Internet. So, during my talk, the audience looked bored because I was preaching to the choir.

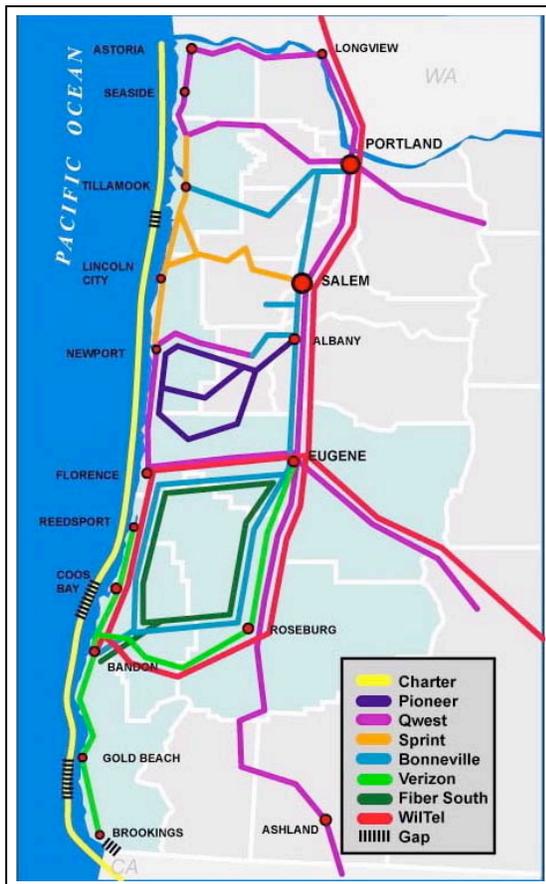
As soon as I finished, former Curry County Commissioner Marlyn Schafer (photo at right) confronted me. Former Commissioner Schafer exclaimed, "Onno! That's all fine and good. But, in my County, Curry County, we don't have fiber optic route redundancy! And, many of our people don't have access to any kind of broadband. *We're still on dial-up!* We've urged Verizon and the others to improve their services. They keep putting us off. Before we can do any of the things you're talking about we need basic connectivity!"



Former Commissioner Schafer was correct. Especially in 2005, Curry County was squarely on the wrong side of the digital divide. Five years later, Curry County still doesn't have access to a route redundant fiber optic network (a loop). And, some unincorporated communities in Curry County, even places along the U.S. Highway 101 corridor, still don't have access to broadband.

Why is Fiber Optic Route Redundancy a Big Deal?

2005 Fiber Optic Cable Infrastructure on the Oregon Coast



Fiber optic cables carry incredible volumes of Internet traffic at the speed of light. Digital traffic — whether it travels over a wire or through the air on a wireless network — must find its way to a fiber optic backbone network.

By the fall of 2005, most of the Oregon Coast (from Astoria to Bandon) enjoyed pretty good access to route-redundant fiber optic networks. But, even today, Southern Coos County (South of Bandon), Curry County, and, four Northern Counties in California, don't have access to self-healing route-redundant fiber backbone networks.

Why is that such a problem? Well, about once a year or so, for one reason or another, Verizon or Charter Communications fiber optic lines to Curry County get damaged. That happens to all cables. Because the Internet traffic on those lines can't be re-routed through another path, through self-healing a ring, virtually all out-of-the-area communications can be shut down for hours at a time. That means, on that carrier's network, no phone service, no credit card/debit card transactions, no Internet services (dial-up or broadband), and, in Verizon's case, because they are the Incumbent Local Exchange Carrier (ILEC), 9-1-1 services are greatly impaired. That's scary!

Today, most businesses along with the public safety community and the medical community require 24-7 access to the Internet. Many entrepreneurs won't set up shop in a community without access to a route-redundant fiber network. That's why fiber optic route redundancy is such a big deal—it makes the Internet reliable. That's why so many regions in Rural America remain on the wrong side of the digital divide.

Why Does the Digital Divide Exist?

That's easy to explain. It's difficult to make a business case to deploy networks (especially fiber) in sparsely populated rural regions. If there's rugged terrain, deployments get even more expensive. For "network operators" it's about the ROI (return on investment). To run an economically sustainable network, they need: (1) a critical mass of customers (subscribers to their network), (2) certain price points ("ARPU" or average revenue per unit), and (3) certain population densities.

I totally understood why former Commissioner Schafer was angry. She learned, the hard way, telecommunications companies can't be browbeaten into upgrading their networks. There's no federal or state requirement compelling companies to serve rural communities with robust telecommunication networks. In the United States, it's market driven. Network operators have to want to make those investments.

There are two federal programs established to address the digital divide. While well meaning, these programs have not been robust enough to fix the digital divide. Most notably, these programs are: the Rural Utility Service (RUS) loan program, and, the grant program under the Universal Service Fund (USF) grant programs under the Federal Communications Commission (FCC) (which subsidizes phone service in Rural America by fees attached to all landline phone bills). Neither of these programs nor the current ARRA broadband stimulus funding opportunity address route redundancy (at least directly).

Here's the irony. When it comes to "connectivity" the United States, the nation that pioneered computers and the Internet, has fallen behind many other countries.

What Can We Do?

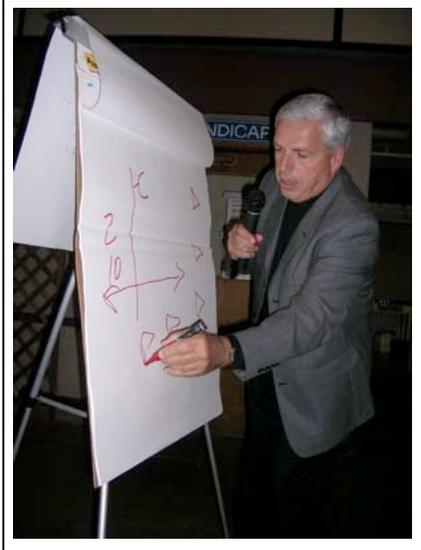
By the late 1990s, a number of local governments tried to fix the digital divide by deploying municipal telecommunications networks. While some were successful, many efforts failed miserably. Running a telecommunications network is *not* a core competency of local government. Government-run networks that succeeded generally do not rely on a public subsidy for ongoing operations; and, they function a lot like the private sector.

So, with that experience behind us, there's an emerging consensus that the way to solve the digital divide in Rural America is through public-private partnerships. Today, more and more, government-run broadband networks are viewed as remedies of last resort. They may make sense only for the most remote and expensive places to serve.

To their credit, by late 2005, local government leaders in Curry County and in Northern California began to understand that. They asked themselves, "Okay, what can *we* do, at the local level, to partner with network operators to improve the business case for telecommunications infrastructure investments? If we signal we are ready to do our part, can we persuade telecommunications companies, big or small, to invest in our communities?"

That's a paradigm shift. Taking that pragmatic approach could be among the first big steps toward solving the digital divide in Rural America.

Rolling Up Our Sleeves in Gold Beach



A month or so later, on November 2, 2005, Commissioner Schafer hosted a town hall meeting on telecommunications at the County Fair Grounds in Gold Beach.

I asked three members of OCZMA's "Telecommunications Technical Team" to join us in Gold Beach. They were John Irwin (a telecommunications consultant from Jackson County, then-Chair of the Oregon Telecommunications Coordinating Council (ORTCC)), Frank Casazza (photo at left—a retired telecommunications executive residing in Florence), and, Christopher Tamarin (photo below right—Oregon Business Development Department [OBDD]).

Many other people attended—Charter Communications, Edge Wireless (a cellular provider subsequently



acquired by AT&T), local ISPs (Internet Service Providers), library staff, business people, local media, and interested citizens. Eric Schmidt from the Association of Oregon Counties (AOC) and Jeff Griffin from Governor Kulongoski's Economic Recovery Team (GERT) were there too. Supervisor Martha McClure from the Del Norte County Board of Supervisors represented Del Norte County at the meeting.

There were two objectives at the Gold Beach meeting: (1) exchange information about telecommunication services in the region, and (2) launch a process to improve services in the two-county/two-state region.

At the Gold Beach meeting, we had a practical dialogue about the problems facing Curry County and Del Norte County. Private sector folks explained the real world challenges they faced upgrading their networks. Agreements were forged to form two county-level telecommunication committees to work the issues on both sides of the border (one for Curry County and one for Del Norte County).

After the meeting you could feel the enthusiasm. A person approached me and said, "Thank you for being here. We've had meetings before on this, but nothing happened. This feels different. This feels like something's finally going to happen!"

A Memorable Dinner

That evening, a number of us (including Supervisor McClure and former Commissioner Schafer) had dinner with the Tribal Council of the Smith River Rancheria. The Smith River is located six miles south of the Oregon border in Del Norte County. Before dinner, we stood in a circle and joined in a prayer. Loren Bommelyn (Tribal Council) delivered a prayer in Tolowa and English.

Loren concluded by saying, “May the Creator bless the food we are about to enjoy. And, may he bless this gathering of people. Let us work together to help our people.”

We talked about the meeting in Gold Beach. Everyone agreed working the issue on both sides of the border was the logical first step. Initial tasks were identified: (a) preparation of an inventory



of the region’s existing telecommunications infrastructure, (b) mapping potential new fiber routes coupled with cost estimates to achieve fiber optic route redundancy, and (c) inventory current and projected demand for telecommunication services in the region. Data gathering would be geared to making business cases for additional investments. We also brainstormed about the role local governments and Tribal governments can play in serving as anchor tenants for the networks.

When it was John Irwin’s turn to speak he raised his glass and said, “How can we bring improved telecommunication services to our communities? By doing what we are doing here tonight. By breaking bread, by making friends.”

Following Through—Big Time

Del Norte County and Curry County set about attracting funds to support a cross-border broadband initiative. Curry County received funding from the Oregon Business Development Department (OECDD). Del Norte County tapped into an infrastructure grant program at the California Department of Transportation (CALTRAN). OCZMA shared copies of the *Coastal Telecommunications Strategy* and assisted with the development of the work scopes for the grants.

John Irwin (photo at right) was awarded the telecommunications strategic plan contracts from both counties. Irwin immediately set out to inventory/map the existing infrastructure in the region. That meant driving around the region and getting out of the car to look at things like utility corridors and right of ways. With a GPS locator in his hand, Irwin recorded their locations. Irwin also began making personal visits to local leaders and key businesses in the region to build relationships. That was time-intensive but essential to the process. Back at his office in Central Point, Irwin began collecting information from the Federal Communications Commission (FCC) web site and other sources to piece information together on spectrum licenses, antenna locations, microwave radio license locations, and the power infrastructure of the region.



In addition, Irwin began the development of a survey instrument to document existing and potential demand for telecommunication services in the region. Irwin drew upon the experience he gained doing other telecommunications strategy planning efforts. He also borrowed ideas

from good work happening elsewhere in Nebraska and some other rural areas in the United States.

Irwin recalls, “It was a collaborative process. The Tri-Agency Economic Development Authority (TA EDA) in Del Norte County and the Curry County Commissioners and their staff were directly engaged. Those leaders opened doors in the community for me.”

To research this newsletter, I contacted people in Northern California to get their views on the strengths and weaknesses of the project. I was told how important it was that John Irwin helped people understand the basics of telecommunications. From his office in Central Point, Oregon, day after day, week after week, Irwin sent out a steady stream of e-mails with links to the latest developments in telecommunications and tutorials on broadband to people in Curry County and Del Norte County. One individual told me “Yeah, John really stirred up the dust. He helped us understand why aggregating broadband demand was so important, and how small markets can become sizeable markets capable of attracting investment. It took a while, but, soon, it began to make sense.” Another individual said, “Even to this day, I return to some of the source documents John Irwin sent us. We needed that information. It opened our eyes.”

Because of this groundwork, when surveys were sent out to many people/businesses in the region, the response rate was phenomenal. I stayed in close contact with John Irwin throughout the project. I remember when he called me to inform me the surveys were rolling in. It was a triumph. Irwin explained, “It’s happening because local leaders, trusted people in their communities, lent their credibility. They reached out and let people know why this was really important. That’s why we got a response rate of 30%.”



The data were compelling. Irwin explained, “There was nothing magic about it. When we developed the survey, we applied basic business principles. Look, having a map of infrastructure doesn’t tell you *why* an area isn’t being served. You have to know what’s going on within the white spaces of the map.” For Irwin, some of the key questions are: Who’s in there? What are the housing densities? What are the demographics? Are they inbound? Are they outbound? What are the employment and income levels? What are the education levels? What Internet services do they have now? What are those price points? What are there needs? And, using local sources of

information, Irwin customized the surveys to fit the unique circumstance in different areas. That also boosted the response rate.

Information and Relationships Matter

In addition to Verizon Communications, Charter Communications is the other major telecommunications provider (network operator) in Curry County and Del Norte County. In late 2007, the market information gathered by Irwin for Curry County and Del Norte County helped persuade Charter Communications to invest millions dollars to upgrade their fiber plant running down into Curry County and into Del Norte County (which terminates in Crescent City). The precise amount of money invested by Charter Communications was not disclosed due to competitive reasons. The end result, though, was a 5 Gigabits per second (Gbps) backbone network into that area, with a greatly expanded ability to deliver Internet services, subscriber TV and to open up other services (e.g. telemedicine).

And, today, because of the infrastructure mapping and demand aggregation work, people in Curry County and Northern California are much closer to making route redundancy happen for the region. Here's why. After the initial work in Curry County and Del Norte County, Irwin was asked to develop a large 4-county demand aggregation and mapping project in Northern California (Del Norte, Humboldt, Mendocino and Trinity Counties). Some of the proposed fiber routes needed to serve Curry County and Del Norte County by necessity run through these other counties. It may take only \$10 million dollars (a ballpark figure) to provide route redundancy for the region (with middle-mile fiber builds on U.S. Highway 101 and Route 199).

The Redwood Coast Connect (RCC) project (<http://redwoodcoastconnect.humboldt.edu/>) delivered detailed mapping and market information. The information was used for ARRA and other funding applications. A number of regional investors utilized the reports to identify local opportunities and they are now underway developing broadband services. So, these infrastructure gaps could be closed at any time.

The success of these data gathering programs influenced events in the State of California. California now has a \$100 million California Advanced Services Fund (CASF) Investment Program administered by the California Public Utilities Commission using California's Universal Service Fund (USF) to provide targeted investments. And, the RCC model has been used as a model for other California projects.

What does all this prove? It proves telecommunications infrastructure mapping combined with actionable market data is a powerful combination. Having said that, informed local and state leadership still needs to drive the process and maintain a sense of urgency to get rural communities connected (and encourage adoption rates of broadband services).

Coming Full Circle in Oregon

Back in Oregon, by the fall of 2008, a near consensus had emerged that we needed to do a broadband mapping effort in Oregon. In October 2008, at the Oregon Connections

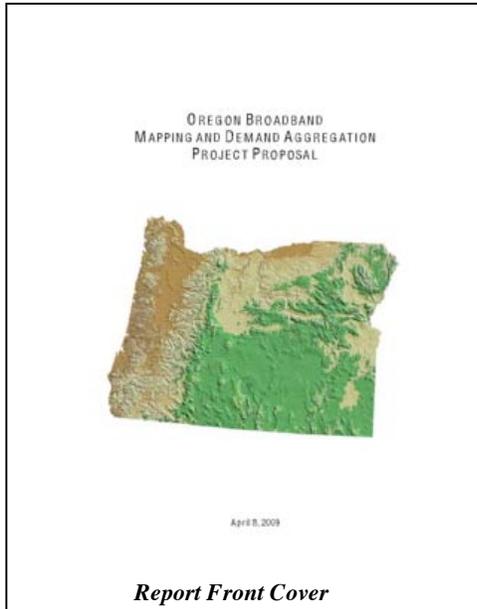


Telecommunications Conference in Newport, a panel of influential people—including Vint Cerf from Google (one of the recognized “Fathers of the Internet”) and Ray Baum of the Oregon Public Utilities Commission (OPUC)—agreed, that of course, Oregon should inventory telecommunications infrastructure and develop market information about underserved areas.

After the conference, we formed a small team (Ed Parker from Parker Telecommunications, Chris Tamarin from OBDD, and John Irwin) to draft a work scope for an OCZMA grant proposal to do a broadband mapping and demand aggregation project for the entire Oregon Coast.

John Irwin was the lead drafter. The project, as originally conceived, was a logical extension of the work OCZMA helped initiate in Curry County and California. From my perspective, if OCZMA could attract resources to inventory the entire Oregon Coast, in time, the process could be expanded to other rural regions in Oregon. In other regions, of course, the effort would be spearheaded by organizations from those areas. That's the whole point—have a process fully supported by trusted and committed local leaders.

Events, though, intervened. In April 2009, at long last, our team completed the *Oregon Broadband Mapping & Demand Aggregation Project*. The document had evolved. It was no longer a bare-bones work scope for a grant application. Irwin wrote a comprehensive description of the methodologies. The document provided *the* framework for how to do the work (you still need to field a team with the right skill sets and local connections). In addition, the proposal became more generic and not just targeted to the Oregon Coast under the auspices of OCZMA.



We chose to submit the *Oregon Broadband Mapping & Demand Aggregation Project* to the Oregon Public Utilities Commission (OPUC). Here's why. By the spring of 2009, the contours of the federal Stimulus Package (ARRA) had become clearer. The OPUC would be overseeing a statewide broadband mapping project and would seek a grant from a program funded by by ARRA. We have confidence in the OPUC. One of the members of our drafting team, Chris Tamarin from the Oregon Business Development Department (OBDD), joined the team of people at OPUC pulling together and coordinating-vetting Oregon's grant applications on telecommunications. That was fortuitous. As a result, many of the field-tested methodological approaches embedded in the *Oregon Broadband Mapping & Demand Aggregation Project* became integrated into the State of Oregon's grant application (see link to Project Proposal on Page 9).

Looking Ahead: Opportunities Abound

It is difficult to overstate the potential of Oregon's broadband mapping effort. As we stated earlier, local support is important. We learned that in Curry County and Del Norte County. That's why leaders on the Oregon Coast need to support the people carrying out Oregon's mapping project for the OPUC.

Here's another reason to be excited. Broadband technologies have evolved rapidly—especially wireless technologies. That's going to be a game-changer. Recall, in 2006, OCZMA was laying the groundwork to help a company do a region-wide deployment of WiMAX. WiMAX is the incredible new wireless broadband technology supported by the Intel Corporation and a coalition of many other companies (<http://www.wimaxforum.org>). The effort on the coast collapsed because the company awarded USDA RUS funding didn't have the horsepower to get the job done.

In any event, under the best of circumstances, 2006 was probably too early to launch a WiMAX deployment. You can't predict, with any precision, when an emerging technology will be ready for market. But today, WiMAX is ready. WiMAX has been deployed, for instance, in Portland and Salem by CLEAR, and in many other places around the world. It works. In response, the cellular industry has been working day and night to develop a competing wireless broadband technology (with 4G capabilities) called Long Term Evolution (LTE).

What does this mean for rural communities? Once these two new wireless technologies start getting deployed, many more residences and businesses in rural areas will have access to

broadband. Moreover, because they are so cost effective, these wireless technologies will make it possible to serve many remote rural communities.

And, before long, coastal cities along the U.S. Highway 101 Corridor will see WiMAX deployments. Therefore, in the near future, we expect a huge surge in Internet traffic on the Oregon Coast and across the nation. It will be driven by the insatiable demand for mobile video, which is, in particular, bandwidth-intensive.

That begs another key question. Are fiber networks on the Oregon Coast robust enough to absorb the surge in demand? In the last few years some important investments in fiber plant on the Oregon Coast have occurred. Still, when forecasting the demand for bandwidth, we better check our assumptions in light of these revolutionary developments in wireless broadband.



On December 28, 2009, I had the honor of watching the first WiMAX deployment take place on the Oregon Coast. At Central Lincoln PUD in the heart of Newport, an employee of CoastCom (<http://www.coastcom.net>) carefully scaled Central Lincoln PUD's tall tower. Then, Greg Palser (photo at left), after receiving a radio message from his guy on the tower, used his laptop to light up the system.

It was thrilling to see the lights blink on, signaling, "all systems go." Since December 2009, over Newport, there's been a cloud of broadband-speed wireless Internet—WiMAX. The future, ladies and gentlemen, is *now*.

Recommended Links:

J. Irwin Community Informatics Consulting: <http://www.jirwinconsulting.com>

Oregon Broadband Advisory Council (OBAC): <http://www.oregon4biz.com/The-Oregon-Advantage-Telecommunications/oregon-broadband-council/>

Oregon Broadband Mapping & Demand Aggregation Project Proposal:

<http://www.jirwinconsulting.com/OR%20BB%20Mapping%20and%20Demand%20Aggregation%20Project%20040809.pdf>

Oregon Connections Telecommunications Conference: <http://www.oregonconnections.info>



Onno Husing has been Director of OCZMA since 1996. Husing was named "Outstanding Telecommunications Advocate, 2006 at the Oregon Connections Telecommunications Conference. Husing served on the Oregon Telecommunications Coordinating Council (ORTCC) from 2002 to 2009.

OCZMA is an association of Oregon coastal units of government organized under ORS Chapter 190 (counties, cities, ports, soil & water conservation districts, and the Coquille Indian Tribe)

Information about OCZMA

The Oregon Coastal Zone Management Association (OCZMA), formed in 1976 under ORS Chapter 190, is a voluntary association of coastal counties, cities, ports, soil & water conservation districts, and the Coquille Indian Tribe on the Oregon Coast established to provide a forum for the resolution of issues of particular concern to the local governments of the coast and the people they represent.

Association Officers

Jack Brown • Chair (City of Depoe Bay)

Jeff Hazen • Vice Chair (Clatsop County)

Terry Obteshka • Secretary-Treasurer (City of Newport)

FY 2009-10

Association Staff

Onno Husing • Executive Director

Georgia York • Executive Assistant

Telephone: (541) 265-8918

Fax: (541) 265-5241

E-mail: onno_husing@class.orednet.org

georgia_york@class.oregonvos.net

Web Site: www.oczma.org



P.O. Box 1033; 313 SW 2nd, Suite C
Newport, Oregon 97365

Association Membership

Clatsop County

Coos County

Curry County

Douglas County

Lane County

Lincoln County

Tillamook County

City of Brookings

City of Cannon Beach

City of Coos Bay

City of Depoe Bay

City of Florence

City of Garibaldi

City of Lakeside

City of Lincoln City

City of Manzanita

City of Nehalem

City of Newport

City of North Bend

City of Port Orford

City of Reedsport

City of Rockaway Beach

City of Tillamook

City of Toledo

City of Yachats

Port of Alsea

Port of Astoria

Port of Bandon

Port of Brookings Harbor

Oregon International Port

of Coos Bay

Port of Garibaldi

Port of Gold Beach

Port of Nehalem

Port of Newport

Port of Port Orford

Port of Siuslaw

Port of Tillamook Bay

Port of Toledo

Port of Umpqua

Clatsop SWCD

Coos SWCD

Curry SWCD

Lincoln SWCD

Siuslaw SWCD

Tillamook SWCD

Umpqua SWCD

Coquille Indian Tribe