Moschetti, M.P., M.H. Ritzwoller, F.C. Lin, and Y. Yang, Crustal shear velocity structure of the western US inferred from amient noise and earthquake data, J. Geophys. Res., 115, B10306, doi:10.1029/2010JB007448, 2010.

Moschetti, M.P., M.H. Ritzwoller, and F.C. Lin, Seismic evidence for widespread crustal deformation caused by extension in the western USA, Nature, 464, Number 7290, 885-889, 8 April 2010.

Properties:

Location: US west of 110°W longitude
Grid: 0.5°x0.5°
Stations: TA
Data: Rayleigh and Love wave phase speeds, Rayleigh wave group speeds.
  Ambient noise: Oct 2004 - Dec 2007 (526 stations)
  Earthquakes: 250 earthquakes, Ms>5.5, 1/06-9/08
Tomography:
  Ambient noise: ray theory (eikonal tomography, Lin et al., 2009), 6-40 s for Rayleigh, 8-32 s for Love
  Earthquakes: 2-plane wave regionally, called multi-plane wave, 25-100 s
Parameterization: sediment layer, 3 crystalline crustal layers (4 in wet regions), 5 B-splines in the mantle
Radial Anisotropy: two-layers, constant in crystalline layers 2&3 in crust and in mantle.
Inversion: Monte Carlo model-space sampling following neighborhood algorithm.
Forward code: Mineos
Moho: variable.

Format of model file: WUS_RadialAnisotropy.zip

The model is presented in a sub-directory in which every geographical grid location is a separate 1-D Vs model. In the crust, velocities are constant in layers, there are repeated knots to indicate jumps in velocities and the Moho is the last repeated knot. Here's an example found in a file called vs_235.0_48.5.dat for (lat, lon) = (48.5, 235.0):

z (km) Vs (km/s)	
0.000 0.000	water
0.091 0.000	water
0.091 2.813	sediments
2.828 2.813	sediments
2.828 3.009	Crystalline Layer 1
7.355 3.009	Layer 1
7.355 3.229	Layer 2
16.522 3.229	Layer 2
16.522 3.554	Layer 3
25.735 3.554	Layer 3
25.735 4.163	Moho
27.500 4.163	Mantle
30.000 4.179	Mantle

Information about radial anisotropy is contained in a file called: param_aniso_amp.dat. Radial anisotropy is constant in Layers 2&3 of the crust and then also in the mantle. So to get the radial anisotropy model at a given depth you need isotropic shear wave speed Vs and the amplitude of anisotropy A in the crust and in the mantle. The file is formatted as follows: lon, lat, A (crustal), A (mantle). For example, for (lat, lon) = (48.5, 235.0):

Lon	lat	A_c	A_m
235.0	48.5	2.46	1.89

where the crustal and mantle amplitudes are in percent.

To find Vsh and Vsv at any depth, one uses the following equations, because Vs is the Voigt average:

A=2(Vsh-Vsv)/(Vsh+Vsv)   Vs=[(Vsh^2+2Vsv^2)/3]^(1/2)

Remember to convert A from percent to decimal and to use the correct amplitude depending on whether you're in the crust or the mantle.