CASCADIA HIGH SPEED RAIL

Willamette Valley Region: Portland/Vancouver, Washington to Eugene/Springfield

University of Oregon
Graduate School of Architecture, Portland: Fall 2010

601 Research Option: Cascadia High Speed Rail Terrains and Typologies
Tuesday/Thursday
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INSTRUCTORS
James Pettinari, U of O, Professor
Lloyd D. Lindley, FASLA, Adjunct Professor, Lead
Brad Perkins, Cascadia High Speed Rail Advocate

COURSE DESCRIPTION

High Speed Rail with trains traveling at potential speeds between 110 and 150 miles per hour is coming to the Willamette Valley reaching from Vancouver, B.C. to Eugene/Springfield. This new form of transportation promises to connect Willamette Valley cities and shape urban areas unlike any mode of transportation today. Eugene and Springfield to Portland and Vancouver, Washington would be within convenient travel times that create new possibilities for the architecture of employment and housing in new regional centers and interconnected station areas.

This seminar is open to architecture, landscape architecture and urban design students who will graphically study the social, political and physical geography of high-speed rail alignments between Eugene and Vancouver, Washington. Students will develop hybrid alignment and station location alternatives, map transit and transportation connections, prepare case studies that identify and illustrate architectural typologies of mixed use development that support this new paradigm in travel. Students will also be introduced to economic development models and formulas that will assist with their examination of architectural typologies. A sketch evaluation of alignments and station areas will help students identify and select locations for more detail design development. Exploration through aerial diagrams and perspective drawings, cross sections, illustration of HSR supportive development will expand students understanding of Cascadia High Speed Rail Station Area design.

Research including urban design and architectural case studies, development regulations, and existing and ongoing HSR planning including the Columbia River Crossing will inform the design process and lead to a brief one page white paper(s) of findings and conclusions regarding HSR alignments, supportive development and opportunities for reducing Oregon’s carbon footprint, and increasing sustainability.

Work will also include assembling data and materials in preparation for future studies that will focus on project development through constructing models of corridors from Tualatin to the Rose Quarter, and Vancouver WA to and future Rose Quarter HSR Station, form based design guidelines, design development of HSR supportive mixed use building types leading to fully developed plans, sections, elevations and building performance evaluation.

Participants will be challenged with questions of cultural and historic context, high speed rail station area development patterns compared to other transit oriented developments, and the supporting architecture and form based principles of building in a new way for the Willamette Valley region. Station areas in the Willamette Valley segment of the Cascadia High Speed Rail Corridor are as diverse as they are contextually complex. Exploration of Willamette Valley scale regional centers will challenge students to investigate impacts on small, medium, and large communities and neighborhoods through architectural typologies, mixed use development, civic uses, transit, transportation, sustainability and livability. The seminar will expand upon a Willamette Valley High Speed Rail Atlas, developed by students during summer term that identifies a mission, goals and technical background in preparation for this fall seminar.
CASCADIA CORRIDOR

The Cascadia Corridor is home to over 8 million people. Population growth causes stress on physical, educational, social and cultural infrastructures. The “new regionalism,” conscious of a certain quality of life and growing within a restricted geography, will require a commitment to create stronger ties throughout the Northwest. A new series of “highways” is needed to efficiently connect the region’s government, businesses and people. One of those “highways” will be high-speed rail trains traveling over 110 miles/hr and connecting all cities between Vancouver, BC and Eugene, Oregon. Nothing could do more to make the movement of goods and people easier while at the same time preserving our livability by reducing congestion and air pollution.

The Cascadia Corridor from Eugene to Vancouver, BC has been designated as one of several potential high-speed rail passenger corridors in the country. This system would be fully electrified on new double tracks mostly on a separate corridor as an alternative to Oregon Department of Transportation’s proposals on private freight train corridors. Such a system could effectively offer an energy saving alternative to both automobile and airplane travel for the given distances between Eugene, Portland, Seattle and Vancouver, BC. The system would become an economic development corridor that would link new business opportunities and other alternative modes of transportation in the region.

The proposed high-speed station site in Portland would be moved to the east side of the river to eliminate two major river bridge crossings. The facility would be a through station assuring a smooth flow of high-speed regional trains and metro commuter trains. The historic railroad station on the west bank would become a public market similar to the Pike Place Market in Seattle. The new east bank facility would be connected to the present light-rail network, Portland streetcar, the Interstate Freeway system, the proposed bikeways and river taxi.

LOCATION

Cascadia HSR Corridor: Eugene to Vancouver B.C.
Cascadia HSR Connections: Eugene, Albany, Salem, Tualatin, Portland, Vancouver WA, Olympia, Tacoma, Seattle, Bellingham, Vancouver B.C.
Cascadia HSR Study Area: Eugene to Vancouver WA
WORK PROGRAM, PRODUCTS AND SCHEDULE

WEEK ONE

Research:
Past Student presentations
Alignment Alternative Case Studies
Missoula Flood video
Reading Assignment

WEEK TWO

Workshop One
Create Sketch Alternatives
Define Scales of Regional Centers
Connectivity

Guest Critique

WEEK THREE

Workshop Two
Define urban, suburban and agrarian form of regional centers
Three dimensional interpretation of topography and geography.

WEEK FOUR

Produce schematic level illustrations of alternative alignments and regional centers
Discussion
Report contents and outline

WEEK FIVE

Prepare land use and zoning maps and make proposals for new land use and zoning to support regional centers.
Discussion

WEEK SIX

Define architectural typologies that are HSR supportive for employment, housing and civic uses.
Classify and illustrate architectural typologies
Discussion

WEEK SEVEN

Assemble mapping and illustrations for each alignment alternative.
Prepare draft illustrative report
Discussion

WEEK EIGHT

Review report and findings
Guest critique

WEEK NINE

Final discussion of findings
Deliver final report with a future work description.
Reading

Elective and required reading to be assigned from the following:

Background Orientation HSR Cascadian Atlas, U O Summer Term 2010

Historic and Cultural Context, periodicals

Kaspersin, Pettinari. *Media Orientation to Aerial Perspective and Diagramming - Connective Networks.* Chapter Eco-Region Rooms of Cascadia, Visual Thinking for Architects and Designers,


Halprin, Lawrence. *Willamette Valley Plan.* Lawrence Halprin and Associates, all

    A Response to Values, pages 79 – 101
    The River Basin, pages 127 – 151
    The Metropolitan Region, 153 – 161


    Chapter 1 Gateway page 17-46
    Chapter 2 Depot page 189-222

PARTICIPANTS

Guest speakers will lecture on politics, history, HSR supportive development, transportation planning. Speakers will present technical papers, lectures, and documentaries of HSR design and operations.

STRUCTURE

Depending on class size, students will be self assigned to three or four teams. Each team will lead discussions and work on selected background research, case studies, HSR corridors, station area architectural typologies, and sustainability. The work of this term is intended to prepare for a possible future work.