

2/14/18

TO: U of Oregon Faculty Senate

FRO: Ed Whitelaw, U of Oregon, Economics and FION with Samier Waqar, FION

RE: U of Oregon's Proposal for North Campus Conditional Use Permit

I. Origin, Purposes, and Conclusion of This Memo

- A. Origin: In a 1/22/18 email regarding the UO's "proposed developments north of the railroad tracks and near the river," George Evans stated that he and other UO faculty believe "the university [has not] adequately [taken] into account the loss of habitat, effects of light pollution, and the amenity values to those who walk, run or bike on the paths that are near these proposed developments." He doubted the UO had tried "to quantify the lost benefits for current users and future users." He and I agreed I would: 1) describe how best to quantify comparing the alternatives for handling the area between the tracks and into the river and 2) evaluate how well the UO's proposal serves the objective of a quantitative comparison of the alternatives. Since George Evans' email and subsequent exchanges, I added 3), namely, scrutinize the 34,000-student footprint. George had nothing to do with this addition.
- B. Purposes:
 1. In Part II of this memo, I heed the UO Proposal's implicit request to pay no attention to what's behind the curtain labeled "34,000-STUDENT FOOTPRINT!" My purpose in Part II then is to evaluate the UO's alternative-free proposal, taking the 34,000-student footprint as given and enriching the UO's proposal with what I see as some of the salient, relevant alternatives. I characterize Part II as "Standing Very Close and Squinting."
 2. In Part III, I look behind the curtain (aka I question the footprint) by comparing what the UO *appears to have done* and what it should have done. I characterize Part III as "Stepping Way Back with Eyes Wide Open."
 3. In Part IV, I list the main sources on which I've relied. In Part V, I list my affiliations and qualifications.
- C. Conclusions: The UO's Proposal as a whole is largely irrelevant. Below, I've specified various, specific fatal errors.
- D. Various: I proffer this memo as work in progress. It's neither definitive nor subjunctive. But it's certainly indicative. Without my colleague Samier Waqar's collaboration, I wouldn't have come close to pulling it together. I alone am responsible for any errors of omission or commission.

II. Take 34,000-Student Footprint as Invariant: Standing Very Close and Squinting

- A. Concept, Method, and Summary of Conclusions
 1. Concept: At the conceptual level, the seemingly narrow matter at hand—what to do with the parcel between the railroad tracks and into the river—involves the Venn Diagram intersection of at least three dynamic systems: an urban system, an ecological system composed of adjoining riverine, riparian, and land subsystems, and climate change.
 2. Method: Assuming the UO's proposal contained alternatives to the physical capital and natural capital¹ it proposes, the UO should have adopted a credible method for comparing alternative sets of uses for the parcel at issue. It didn't. The most widely respected and applied method for comparing such alternatives is cost-benefit analysis (CBA). In choosing a method, the UO should explain its choice by contrasting it with the alternatives it could have chosen, e.g., CBA. It didn't do this either.
 3. Summary of Conclusions:
 - a. Among the UO proposal-related documents I've reviewed, I've not found a specific method by which the UO has developed its proposal. Instead I've found a collection of partial analyses. To conduct a partial analysis, one must hold other conditions constant. But when

¹ Physical capital is "those durable produced items that are in turn used as productive inputs for further production," e.g., buildings, soccer fields, and utilities. Natural capital is the "endowment of environmental and natural resources," e.g., the ecological system I describe above in IIA(1) above.

examining complex, dynamic systems, e.g., urban and ecological systems in the context of climate change, failing to include variables and units of measurement in common dooms trying to rank alternatives rigorously. The UO's proposal omits such variables and units of measurement, a fatal error of omission. By "fatal error," I mean sufficient, on its own, to render the UO's proposal largely irrelevant.

b. In its proposal, the UO commits other fatal errors. I list only three of them below in Part II(B).

B. Judging the UO's Errors by Cost-Benefit-Analysis (CBA) Standards

1. For identifying the UO Proposal's other fatal errors, I've derived the evaluative criteria from CBA standards.

2. Three of the UO Proposal's other fatal errors.

NB: In describing these errors, I've indicated when I've testified on them in other venues, e.g., litigation and hearings.² I have citations, but I've dodged the hassle of including them.

- a. Identify the Relevant Scope: In this matter, the relevant scope has three dimensions: services, geography, and time. In the UO's proposal, the relevant services, as I see them, are the services demanded from the physical capital proposed and the services demanded from the natural capital, both as it is and how the community of UO faculty, students and staff as well as of residents of Eugene all would like it to be. Addressing each of the three dimensions of the relevant scope with rigor and clarity is a necessary condition for meeting the professional standards of CBA. The UO's proposal fails to meet this condition, and thereby makes fatal errors of both omission and commission.
- b. Identify the Alternatives: The UO's proposal fails to identify all—perhaps any—of the alternatives a) to the physical capital (buildings, soccer fields, and utilities) it proposes or b) to the natural capital it proposes. Again, these are fatal errors of omission.
- c. Risk and Uncertainty: Distinguish between, and account explicitly for, each of risk and uncertainty.³ The UO omits this step. Omitting uncertainty within the context of climate change in a project that has implications for generations is a fatal error.⁴

III. Scrutinize the 34,000-Student Footprint: Stepping Way Back with Eyes Wide Open

A. Untake as Given the UO's 34,000-Student Footprint.

B. Take as Given the 4 Parts of Policy Analysis 101:

1. Parts 1 (Descriptive: Conditions as they are: 23,000 students); 2 (Normative: Conditions as they should be: 34,000 students); 3 (Explanatory: Why are conditions as they are?); Part 4 (Prescriptive: How to change conditions from 23,000 students to 34,000).
2. For the UO to get from where it is to where it apparently wants to be requires understanding the relevant explanations.

C. The Two Hypotheses the UO Failed to Test

1. The UO Proposal's Implicit Hypothesis: My admittedly quick read of the UO's Proposal tells me its authors have asserted, perhaps unwittingly, that with soccer fields intruding into the ecological system at issue, the UO can gain a competitive edge in the national market in which it competes.
2. My Just Fabricated Hypothesis: My admittedly quickly crafted explanatory and prescriptive long-run plan for the UO, as yet unwritten, would instead put its proposed physical capital,

² My written and oral testimony in 2003-04 before and on behalf of the NAFTA Tribunal in a dispute between Canadian corporation, Methanex, and the U.S. I'd been retained by the U.S. State Department. My testimony focused primarily on the application of cost-benefit analysis. It prevailed over that of Gordon Rauser, then Dean of the College of Natural Resources, UC Berkeley.

³ In economics, with risk one can know the odds of an event occurring while with uncertainty one cannot.

⁴ In 2016-2017, I addressed risk, uncertainty, and climate change before the California Water Resources Control Board re *Hearing in the Matter of California Department of Water Resources and U.S. Bureau of Reclamation*, the so-called "California WaterFix." <https://en.wikipedia.org/wiki/California_Water_Fix_and_Eco_Restore>. I expect to testify again on these topics in 2018-2019 before the same Board, though focused on San Francisco Bay's estuarine system.

including the soccer fields, elsewhere and instead join Eugene in a coordinated effort to optimize the singular natural capital the two institutions share. Now! I'm talking competitive edge for both the UO and Eugene.

3. I proffer as the most serious and fatal error of omission the UO committed in its entire effort is to have failed to compare and contrast the tests of these two hypotheses.

D. The Opportunity Eugene Seems to Have Ignored

1. The City and the UO share the benefits from the ecological system at issue. This system is a *local public good*⁵, an economics term of art. I am confounded that the City of Eugene seems to have allowed a conditional use permit serve as the only official, interinstitutional touching it engages in with the UO.
2. The two institutions also suffer the spillover costs from global warming, an *international public bad*.⁶
3. Perhaps this institutional insularity makes sense in other matters. But in this matter, it's nonsense.

IV. The Main Sources on Which I Relied

Stanford University and Nobel Laureate economist, Kenneth Arrow
University of Montana Dean of Forestry Arnold Bolle
University of Montana zoologist John Craighead
Brookings Institution demographer and Senior Fellow, William Frey
University of Chicago economist Frank Knight
University of Montana botanist Joseph Kramer
Oregon Governor Tom McCall
Yale University economist William Nordhaus
MIT and Nobel Laureate economist Paul Samuelson
MIT and Nobel Laureate economist Robert Solow
Columbia University and Nobel Laureate economist Joseph Stiglitz
Harvard University economist Martin Weitzman
Oregon Governor Oswald West
and others

V. Quals Relevant to This Matter

- A. Undergrad: U of MT ('59-'63) and Yellowstone Park research station (late summers; '61-62): began in forestry: continued de facto in forest botany, watershed systems, and field zoology & ornithology (grizzlies, elk, golden eagle; falconry (honorary member of the Montana Peregrine Institute)); graduated in math, econ & poli sci.
- B. Doctorate, econ: MIT & Harvard ('63-'68).
- C. Teaching econ, including enviro and urban U of OR '67-Stoday; U of Nairobi '70-'71.
- D. Studying ecological systems: Peru ('69-'70; ecology of the Andean condor); Kenya-Tanzania ('70-'71; various ecological systems); Oregon ('74-'75; Oregon coast and south slough estuary systems); Madagascar ('05-'08; ecology of the ring-tailed lemur); Yap, Micronesia (barrier reef, lagoon, and mangrove systems).
- E. Affiliations and consulting
 1. Founded, headed and then worked for ECONorthwest (1974-2015). Founded FION 2015, serve as principal investigator and testifying economist (website is work in progress). FION works closely with ECONorthwest.
 2. Consulting, advising and testifying: '74-today: environmental matters, e.g., Oregon coast ('74-'75; Oregon Coastal Conservation and Development Commission; '02; *New Carissa* grounding); Gulf and Gulf coast ('76-'77, NSF; '17 BP-Deep Horizon oil spill); Exxon *Valdez* oil spill ('89-'02);

⁵ A *local public good* is an asset or activities "whose benefits are largely confined to local residents." In the matter at hand, "residents" include the UO's faculty, students, and staff.

⁶ An *international public bad's* costs "transcend the boundaries of individual countries."

northern spotted owl matters ('91-'92); ground & surface waters (CA, LA, TX, OK, MN, OH, NYC); rivers and aquifers (Willamette, Santiam, Columbia & Snake, Hudson, Sacramento (twice)), San Joaquin, Klamath, Mississippi, Missouri, OK Superfund, etc.