

Sheldon & Associates, Inc.

5031 University Way NE
Seattle, Washington 98105

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DEPT OF ECOLOGY

November 21, 2000

RE: Proposal for Natural Resource Mitigation Plan Review for Sea-Tac Third Runway

Mr. Erik Stockdale;

Enclosed is our proposal to conduct the review of the Natural Resource Mitigation Plan Review for Sea-Tac Third Runway for the Washington State Department of Ecology. Based on the correspondence from your offices, I am submitting this proposal via electronic transfer, a hard-copy will follow in the mail to assure it reaches your offices.

Along with our proposal, I have submitted a cost estimate based on my assumptions of the estimation of hours necessary to complete the work. I realize that you've provided an estimate of \$18,000 to complete this work, and under other circumstances I might have modified my estimate of hours to conform within that cost limit. However, based on my knowledge of the political intensity of this project, the level of scrutiny that it will engender, and the level of detailed analysis it will require, I have taken the liberty of using my best judgment to estimate the number of actual hours it may take to complete the tasks. To that estimate, I've then applied my hourly rate that I would normally charge for expert witness testimony and preparation. I feel strongly that this project requires that level of rigor in its review, analysis and preparedness. If you feel this approach to the cost is inappropriate and would like to discuss it prior to your decision making process, I would be happy to re-estimate my level of work based on further input from you. As a secondary matter, I know that my cost estimate is very probably 'short' on meetings with the Port and their consultants: the frequency and duration of those meetings is difficult for me to anticipate, therefore I would appreciate any input to the frequency which you could provide to make this cost estimate more realistic.

I appreciate you contacting me and requesting that we submit a proposal on this project. I look forward to talking to you about it during your decision making process if you have any questions.

I will be out of town starting Thursday, November 23, returning to my office on Monday, December 4.

I hope you have a wonderfully peaceful holiday with your family.

Sincerely,



Dyanne Sheldon, Principal

AR 018468

EX. 187

Qualifications

From my understanding of Ecology's request for a consultant to review the Natural Resource Mitigation Plan (NRMP) for the Third Runway, Ecology will need a consultant with the following skills and experiences:

- The ability to analyze complex technical documents
- A solid knowledge of the natural history of Pacific Northwest wetlands
- An understanding of the engineering fundamentals and implications of stormwater
- The ability to communicate clearly in written and oral forms
- Ability to work under public scrutiny and potential political pressure
- A reputation for objective scientific analysis of politically intricate projects
- An ability to work effectively with groups of experts on highly technical problems

From my nearly 20 years of working as a wetland ecologist, wetland planner, and consultant in the Pacific Northwest, I think I have a strong grasp of each of those skills and the abilities that are borne from hands-on experiences in the field.

More than an ability to 'read plans', the person conducting this review will need to be able to ascertain the linkages between the aquatic resources in the impact basins and the proposed stormwater management/infiltration systems on the runway plateau. How stormwater is controlled, how facility outlets are configured, and how waters emanating from stormwater facilities get into natural systems are the defining parameters for how urban aquatic resources will function in the future. In the last five years I have been intensely involved with both design and review engineers on the Bear Creek UPDs on Novelty Hill Road in King County. I have been associated with those projects for so long that I now have the experience of reviewing conceptual stormwater engineering plans, seeing those plans installed in the ground AND seeing how they function (or not) compared to what was anticipated. It is no surprise that my primary focus with these facilities has been how they relate to the immediately downstream wetland resources. Particular issues have been how to 'capture' groundwater and re-infiltrate or disperse it into downstream wetland and stream resources while not causing adverse impacts. No small feat, and to date, rarely successful. I have come to understand that far too few design engineers and environmental consultants get to see their designs installed, nor to watch the consequences of their designs over time on downstream resources.

I have also seen variable success at attempting innovative surface water infiltration designs to feed wetland compensation areas and to re-introduce waters into existing aquatic resources. Through success and failure alike, I've come to understand that modeling sub-surface soil conditions and behaviors can only partially address adequate design: so many variables exist that predictive models have limited value in assuring performance of designs, therefore designs have to be adaptive or provide for 'fool proof' contingencies.

I was lassoed as a member of Ecology's technical expert team working on the State Functional Assessment Method for Western Washington. One of the finest compliments I received in that regards was, "...you don't fit into any specialist category, but you are a damn fine ecologist and we value your insight into how our wetlands work..." (A. McMillan, 1998). I do believe that is one of my strong suits: I consider myself a natural historian, one who is interested and immersed in the complexity of the inter-relatedness of our natural systems, not someone who focuses in on one particular narrow area of expertise. I think that expertise will be critical for this project.

For several years, after the passage of the State's Growth Management Act, I worked with the staff of many city and county jurisdictions assisting them in drafting policies and regulations related to sensitive areas. Two of the elements which made me so successful in those endeavors were my understanding of how wetlands functioned ecologically and, my ability to communicate

complex and controversial issues to a broad range of constituents in King and often heated public meetings and hearings. I often was approached after particularly arduous meetings by audience members from multiple 'sides' of an issue, and complimented on my ability to explain complex issues, even if the speaker may not have agreed with my ultimate position. I foresee that my ability to work with complex issues and ultimately, to be able to be articulate in written and verbal formats about those issues, may be a key skill for this project.

A recent project illustrates my ability to remain objective in the midst of a proposal which raises passionate discourse on both sides of the issue. The City of Seattle, motivated by a source of money emanating from the compensation for the West Point Treatment plant in Discovery Park, conducted a public planning process to determine if a pedestrian/bicycle pathway should be constructed between the Montlake neighborhood and the Madison Valley neighborhood, through the Broadmoor community along Lake Washington. Sheldon & Associates, Inc., was hired by the City to conduct the environmental assessment of the proposed walkway through the wetland complex located on the shoreline of Lake Washington, on the fringe of the Broadmoor Golf course. For the entire project we maintained our scientific objectivity between project opponents and proponents, much to the dismay of the landscape design firm who had hired us to work in conjunction with them on the project. For the public meetings and in meetings with the Mayor (convened by project proponents) I presented the project and its impacts in an objective factual manner: no advocacy in either direction, contrary to my clients wishes. Given the complexity of the issues and that it was impossible to predict the extent or nature of all impacts, there was no other avenue for us to pursue as objective scientists. The consequence was that ultimately the Mayor decided not to pursue the project, and we have never been contacted by the landscape design firm again, because we wouldn't step into a role of advocacy.

Lastly, I see a need for the person who works on this project to be able to speak many languages: as an ecologist, as an engineer, as a planner, and as a political realist. One will have to be able to communicate with technical staff from varied backgrounds, and with a variety of staff from agencies which may have conflicting mandates, not to mention the technical staff who are going to be representing the objectives of their clients, the applicants. Communication skills will be key, as will be the trust of all the participants in technical ability and integrity of the person chosen to represent Ecology for this NRMP review. I think I can fill that role effectively.

Project Experience

Provided below is a short list of projects which reflect some of the skills and expertise which I think are crucial for the review of the Natural Resource Mitigation Plan project. Most of these projects include a contact person and phone number; please feel free to contact any of these individuals for references to our work. The projects are grouped into similar types for ease of review:

Washington State Department of Ecology Projects

- **Wetland Functional Assessment Technical Advisory Committee. 1998-99.**
Dyanne Sheldon of Sheldon & Associates, Inc. was contracted by the Department of Ecology to participate in the development and field-testing of a method to quantitatively assess the functions performed by certain types of wetlands found within in the Puget Sound lowlands. She was asked to participate in the long-term study due to her breadth of knowledge of the natural history of wetlands in the Pacific Northwest. The Technical Advisory Team worked in a large committee format of regional experts to debate and shape the functional assessment protocols, then Ms. Sheldon was contracted to join in the

field testing of the protocols to determine their accuracy and reliability. Reference: Mr. Tom Hrubry, 360-407-7274

- **Technical Revisions for "Wetlands and Riparian Restoration Guidebook". 1992.** Sheldon & Associates was contracted by Washington Department of Ecology to review and edit the Draft "Wetlands and Riparian Restoration Guidebook". Sheldon & Associates conducted a comprehensive technical review, verified the information to be scientifically sound and logically organized, and conducted substantive rewrites. In addition, Ms. Sheldon developed a Planner Checklist for the Guidebook. The Planner Checklist is to be used by local planners in reviewing mitigation plans to assure that all the detailed design elements have been considered. Reference: original staff contact has left the agency, please refer to Mr. Andy McMillian. 360-407-7272
- **Washington State Wetland Rating System. 1991.** Dyanne Sheldon, of Sheldon & Associates, Inc., assisted the Department of Ecology in developing the standards and criteria for a wetland rating classification for the state, east and west of the Cascades. She provided technical input into refining the rating parameters. Ms. Sheldon also provided extensive field checking and calibration of the west side methodology, and worked closely with Ecology staff to revise the rating criteria. Her extensive field experience in wetlands west of the Cascades was used as a basis for providing the technical parameters or criteria for rating of wetland systems. Reference: Mr. Andy McMillan, Project Manager, Washington State Department of Ecology, 360-407-7272
- **Compensatory Mitigation Effectiveness: Field Study. 1991.** Sheldon & Associates conducted the field component for a restoration effectiveness study requested by the Wetland Section, Department of Ecology. The work consisted of analyzing constructed wetland mitigation and compensation projects to assess their effectiveness in replacing functional wetland communities. Field forms were devised and data were collected at a number of sites in the Puget Sound area. The written report provided an analysis of findings, conclusions regarding compensation effectiveness, and recommendations for improving compensation design function. This study became the framework for revising compensation plan design and implementation. Reference: original staff contact has left the agency, please refer to Mr. Andy McMillian. 360-407-7272

Technical Analysis of Wetland Compensation Projects

- **King County Master Plan Developments: Wetland Technical Review. 1992-Present** Dyanne Sheldon has provided technical review and analysis on two very large (over 1,000 acres each) Urban Planned Developments in eastern King County for over 8 years. These very controversial projects require close coordination with County Engineering design and review staff, as well as the design civil and landscape professionals representing the applicant for these projects. Ms. Sheldon currently focuses her review work on one of the two projects, while other Sheldon & Associates, Inc. staff review the other UPD project. The primary focus of our efforts is to analyze and condition stormwater management facilities in relation to maintaining the long-term viability of the large diverse wetland communities on the sites. Comprehension of the civil engineering details and consequences of stormwater management are requisite for the appropriate conditioning of the permits. The ability to communicate with civil engineers and design staff is key to being effective on these high stakes projects. Reference: Ms. Lisa Lee, King County Project Coordinator: 206-205-1441

- **Stilligumish Citizens Alliance: Associated Sand and Gravel Company Proposed Granite Falls Quarry. 1995.**

Dyanne Sheldon, of Sheldon & Associates, Inc. was retained by the Stilligumish Citizens Alliance (a citizens activist group) to analyze the Final Environmental Impact Statement for a proposed sand and gravel quarry to be located adjacent to the South Fork of the Stilligumish River, east of Granite Falls in unincorporated Snohomish County. She analyzed the technical documents prepared for the EIS to determine their adequacy in assessing existing resource values on the project site, assessing the potential adverse impacts to wetland and wildlife habitats on the site based on the changes expected from changes in site hydrology, and determining if the project proponent had provided appropriate compensation plans for the anticipated wetland impacts. The technical review was prepared and submitted as expert testimony for the Snohomish County SEPA adequacy determination. Ms. Sheldon provided expert witness testimony during the very acrimonious public hearings on the project. Partially based on the effectiveness of her technical testimony, the Hearings Examiner found in favor of the citizens in denying the project permits. That finding was later over-ruled by an unprecedented act of the Snohomish County Council. Reference: Mr. Jeff Eustis, Attorney. 206/625-9515.

Objective Analysis

- **Arboretum Lakeside Trail. 1997.**

Sheldon & Associates was contracted by the landscape architecture firm of Galloway/Barker, prime to City of Seattle Parks Department, to provide an assessment of wetland and wildlife impacts from a proposed alignment of the Arboretum Lakeside Trail. Monitoring of birds was conducted to identify which species were breeding within the project vicinity, in order to determine if the proposed trail alignment might influence bird populations. The wetlands were delineated and impacts from the proposed trail alignment and user impacts were assessed. Numerous public meetings were attended to present findings and field questions from the public which was strongly polarized in factions opposing and supporting the project. A meeting with the Mayor of Seattle and his advisory team was also conducted to assist in the decision making process. Reference: Mr. Ken Bounds, Parks Director, City of Seattle. 206-684-4075

Gazzam Lake Master Plan. City of Bainbridge Island Parks Department. 1995. Sheldon & Associates, working with Worthy and Associates as project lead, prepared the assessment of wetland and wildlife resources for the Gazzam Lake Master Plan for the Bainbridge Island Parks Department. A review of existing work was conducted as well as a search of literature and available published resources. Community groups knowledgeable of the site were interviewed to identify significant resource sightings and locations. A background report on the identification and significance of the resources present on site was prepared. Master Plan design input for consideration included for example, whether a particular habitat type should be avoided for human access or whether a particular location was a priority for access for interpretation. Numerous public meetings were held where Dyanne Sheldon presented findings and fielded questions from project supporters and opponents. Reference: Mr. Perry Barrett. Sr. Planner, Bainbridge Park District. 425842-2306

Staff Qualifications

I am proposing to be the only staff person from my office working on this project. Technical expertise in the realm of groundwater movement, civil engineering, stormwater design, and geo-hydraulics should be provided by Ecology, King County Surface Water Management, and the Army Corps of Engineers staff to assure consistency in data analysis, calibrations of assumptions and models, and to facilitate coordination of responses.

Given the depth of the expertise represented by the existing agency review team it would appear unwarranted to expend funds and review time for all the engineering parameters. An independent technical and objective review of the feasibility of the proposed compensation package requires a new look at the linkages between wetland sustainability and engineering limits by a wetland ecologist who comprehends those intricacies.

Project Work Plan

My approach to the review and analysis of the issues related to the Third Runway at Sea-Tac is framed around the pragmatic, tempered by the awareness of the political nature of the project. The cost estimate spread sheet attached to this proposal is presented in the basic sequence of actions that I would anticipate the project would evolve through. The pragmatism stems from the logical sequence of reviewing what has been prepared previously on the project, reviewing the correspondence from other resource and regulatory agencies involved in the project, and reviewing the correspondence from the various civic and citizen organizations which have kept a self-assigned watch-dog role in relation to the project. Given the technical capabilities of 'outside' reviewers, those comments and criticisms can highlight issues which may require further focus or analysis.

The sequence of actions I would take would be to conduct a review of the relevant materials and correspondence generated to date on the project. Based on that review, I would then begin a review of the revised Natural Resource Management Plan (NRMP) which is to be submitted by the applicant. During the review of the NRMP a series of field meetings would be conducted. It is understood that the wetland delineations on the proposed compensation sites in Auburn need to be conducted. In addition, it would be insightful to have the applicant's consultants conduct a 'tour' of the impact and compensation areas in the vicinity of the airport itself. This would allow them to present their proposals and allow direct question/answer opportunity on specific details of the proposed compensation actions and impact assessment. I've also budgeted additional time for independent field assessment of the areas in the airport impact and compensation zones. I think that the opportunity to return to those areas, after digesting the contents of the revised NRMP will be critical to defining any issues/concerns associated with the proposed plans.

In addition, I've separately scheduled field time to assess the conditions of the several differing (and potentially competing) concepts for compensation and impacts south of the airport in the vicinity of the Tye Golf Course and the South Access Road. It would seem logical to assess the conditions of the Third Runway impacts and in-basin compensation separate, at first, from the perhaps conflicting 'other actions' proposed in the immediate vicinity.

An accurate analysis of the technical feasibility of the proposed actions and the ecological viability of the compensations will only be possible by melding the input from several technical fields: stream and wetland ecology, civil engineering, stormwater management, and geo-hydrology. I'm assuming that technical experts from Ecology, King County Surface Water, and the Corps of Engineers will all be coordinating our review efforts on the NRMP analysis. These intense brainstorming meetings are predicated on the assumption that all participants have been

on the site and that we are all sitting down together to assess the reasonableness of the applicant's proposals. Task 3 on the spread sheet identifies 12 hours for meetings and coordination between the technical experts of the review team.

Based on the work conducted in Tasks 2-4, a draft findings report will be prepared which will focus firstly on the accuracy of identified direct and indirect impacts to resources in the project area and downstream of the airport. Based on my knowledge of the project to date, it appears that the indirect long-term hydrological impacts to the remaining wetlands and stream resources will be a key issue point. In addition, the technical feasibility of the proposed mitigation efforts will require intense scrutiny. In this context, I use the term 'mitigation' in its original context: the efforts to minimize or moderate adverse impacts. At issue of course, is the feasibility of the design to infiltrate surface water generated on the fill of the runway plateau into the wetlands left at the toe of the plateau embankment in a manner and rate which will replicate pre-fill plateau conditions in the wetlands and down slope streams.

The function of the Findings report would be to identify technical issues; the need (if any), for additional data or analysis; inconsistencies (if any), between various technical reports supporting the applicant's proposal, and recommendations for design modification or design approvals based on the review of the entire technical team. The Findings report will be prepared as a draft for Ecology's review. Revisions, based on feed-back and discussion of issues will be incorporated into revisions of the report before it is presented to the Port's team for discussion and follow-through. It is assumed that the issues and analysis of the Findings report will be organized into In-Basin and Out-of-Basin sections.

The Findings Report may or may not result in modifications to the design of the proposed impacts, mitigating measures, and compensation plans in-basin for the project. Regardless of the need for design modifications, three additional elements will be required to be reviewed and analyzed for the final permit applications: the Performance Standards for all mitigating measures and compensation actions, clearly defined and executable Contingency Actions, and the Monitoring plans and schedule. These three key elements will be analyzed and assessed for adequacy for the In-Basin and Out-of-Basin resources and actions, separately.

I began this discussion of the Project Work Plan by noting that it was based on pragmatism, and recognizing the need to acknowledge the intense political nature of this project. The reality of this project is that pragmatism will not win out over politics: therefore, it must be acknowledged by all parties that unforeseen circumstances are expected, diversions and disagreements will result in unscheduled meetings and revisions, and shifting priorities will perhaps result in decisions made out of context. Therefore, the scope for costs which is attached to this response must be accepted as an effort to recognize and plan for the practical, with no way to 'budget' for the expected unforeseen circumstances.

References

Mr. Andy McMillian. Washington State Department of Ecology	360-407-7272
Mr. Ken Bounds, Director. City of Seattle Parks Department	206-684-4075
Mr. Greg Fewins, Planning Director. City of Federal Way	253- 661-4108

EC OGY: Third Runway

Sheldon & Associates

DATE: 11/21/00

Tasks	Rate	Dyane Sheldon	Admin Support	Total Hours	Labor Cost	Total Estimated Fee
1 Project Management						
Correspondence: phone calls, emails, faxes		12				
Ecology Team Meetings		8				
Subtotal		20	0	20	\$2,600.00	\$2,600.00
2 Review Existing Background Information						
Existing background studies and correspondence		20				
Review and comment on Master Issues list		4				
Subtotal		24	0	24	\$2,000.00	\$3,000.00
3.0 Review newly revised Natural Resources Management Plan						
Review revised NRMMP, compare to stormwater plans		24				
Coordinate review with Ecology, COE, King Co Stormwater Engineers		12				
Identify key issue areas and analyses deficiencies		8				
Subtotal		44	0	44	\$5,600.00	\$5,600.00
4.0 Field Work						
Delineation Verification in Compensation Area: Auburn		16				
Review site conditions with applicant's biologists		8				
Independent analysis of site conditions at SEA-TAC: Miller Creek, Des Moines		16				
Analysis of other field sites directly related to the proposed actions:		8				
Type Golf Course, State Highway projects, etc						
Subtotal		48	0	48	\$5,000.00	\$5,000.00
5 Findings Report						
Prepare Draft Findings report based on findings from Tasks 2-4		20	8			
Meet w/ Ecology Staff		6				
Revise Findings Report based on Ecology staff input		8	4			
Meet w/ Port Staff and their representatives		8				
Subtotal		42	12	54	\$5,850.00	\$5,850.00
6.0 Prepare Draft 401 Conditions w/ Ecology staff						
Address Performance Standards		8	2			
Address Contingency Plans		16	2			
Address Monitoring Plans		16	2			
Subtotal		40	6	46	\$5,850.00	\$5,850.00
Labor Cost		218	18	236	\$26,160.00	\$26,160.00
Expenses (Approx. 7% of Labor Cost)					\$2,000.00	\$2,000.00
Total Fees						\$28,160.00

**Dyanne Sheldon
Principal**

Ms. Sheldon is a wetland ecologist, biologist and certified teacher with 20 years of field experience in both fresh and tidal wetlands of the Pacific Northwest. Her experience includes conducting wetland delineations, inventories, and impact assessments; detailed compensation design; construction oversight for wetland compensation projects; regulatory coordination and permit applications; expert witness testimony; crafting wetland and other sensitive area code language for local jurisdictions per the requirements of the Growth Management Act; review and critique of submitted wetland analysis studies; participating in public meetings and hearings regarding the consequences of proposed actions on wetland resources; teaching at the high-school and college level on topics from environmental law and policy to general wetland biology; providing "on-call" technical assistance for local, and working with educators to assist them in teaching a wide range of science and environmental issue related topics to students of all ages.

Areas of Expertise

- Wetlands Ecology/Biology:** delineation, function assessment, impact analysis, inventory, and implementation of compensatory mitigation design
- Environmental Planning:** development of policy and regulations relating to aquatic lands, assessment of effectiveness of existing code language, code revisions
- Environmental Restoration:** prepare compensation designs, establish monitoring parameters, provide construction oversight, monitor post construction conditions
- Environmental Law and Policy:** assist in permit application and coordinating between various regulatory jurisdictions; craft wetland code language, teach UW Extension courses, interpret regulatory standards
- Wildlife:** assessment of impacts from particular projects or actions, assessment of habitat suitability, conduct surveys, prepare Biological Assessments
- Education:** prepare and conduct teacher training workshops, provide classes for the public related to a variety of ecological areas, work with youth groups in environmental education

Education

- Master of Education Arizona State University, Phoenix, Arizona 2000
Bachelor of Science University of Minnesota, St. Paul, Minnesota: (Botany) 1975

Certifications

- Certified Teacher (Grade 4-12 Science), Washington State, 2000.
Certified Professional Wetland Scientist, Society of Wetland Scientists, 1997.

Special Training

- Corps of Engineers Course, Federal Wetland Delineation Methodology (1987)
Corps of Engineers Course, Wetland Evaluation Technique (WET) Assessment Methodology (1989)
Federal Wetland Delineation Methodology (1989)
Society of Professional Soil Scientists Hydric Soils Workshop (1993)

Memberships

- Society of Wetland Scientists: Two term President of the Pacific Northwest Chapter (1991-1993)
Society of Ecological Restoration
National Association of Environmental Educators
National Association of Marine Educators
National Science Teachers Association

AR 018476