



AGENDA

**9:00 am – 4:00 pm
Wednesday, March 16, 2011**

Location:

Abercorn Best Western
9260 Bridgeport Road
Richmond, BC
(South side of Bridgeport Road across from the Costco)
(Jack's cell 250-715-6285)

Time	Length (min.)	#	Item	Presenter
9:00	5	1	Review of agenda	
9:05	10	2	Old business and action items from December 15, 2010	
9:15	5	3	Approval of minutes from December 15, 2010	
9:20	20	4	Updates on 2011 sowing and class A seed use	Jack
9:40	20	5	Pli seed needs and inventories in the Big Bar and Chilcotin – Next steps	Larry / Jack
10:00	15	6	Proposed Thompson Okanagan Fdi orchards	Tim
10:15	15		Break	
10:30	15	7	Update on briefing with Jim Snetsinger	Brian
10:45	45	8	Subprogram budgets and business planning for 2010/11	
			- LBIS expectations; business-planning process	Brian / Jack
			- Tree Breeding	Barrie
			- OTIP	Darrell
			- Genetic Conservation	Dave Kolotelo
11:30	30	9	Genome Canada genomics proposal in support of climate-based seed transfer	Sally Aitken - UBC
			Other UBC forest genomic projects	Rob
12:00	45		Lunch – to be provided	
12:45	120	8	Budgets - continued	Jack / Brian
			- SelectSeed Ltd.	Jack
			- Extension	Jack for Diane Douglas
			- Seed and Cone Pest Management	Jack for Jim Corrigan
			- Seed Transfer / Genecology	Lee Charleson
			- Genetic Resource Decision Support	Lee Charleson
			- Applied Forest Genetics and Biotech (El-Kassaby)	Jack
			- Final budget allocation and recommendation	Jack
2:45	15		Break	
3:00	15	10	Update on climate-based seed transfer workshop	Lee Charleson
3:15	10	11	Update on new technologies workshop	Jack / Barrie
3:25	20	12	New business	Brian
3:45			Adjourn	

Next meeting June 15, 2011 – Conference call

Agenda item 2 – Old Business and action items from December 15, 2010

Action items from Dec. 16, 2009 meeting

Responsibility	Action requested	Action taken
Jack Woods	<ul style="list-style-type: none"> • lead the preparation of a "Letter of Intent" (regarding a biotechnology call-for-proposals) on behalf of Council • ensure that CTAC and ITAC meeting agendas are sent to FGC members • screen FGC members regarding school spring break time and their availability on these two dates 	<ul style="list-style-type: none"> • underway (Barrie Phillips, Raoul Waert, Jack Woods) • done • done
Al Powelson	<ul style="list-style-type: none"> • distribute a list of the people on the Natural Resource Board 	<ul style="list-style-type: none"> • done
Brian Barber, Joe LeBlanc, Larry Gardner	<ul style="list-style-type: none"> • review recommendations in Lee's terms-of-reference report for the Decision Support subprogram in advance of discussions during the March FGC meeting 	<ul style="list-style-type: none"> • To be presented at meeting
Brian Barber, Annette van Niejehuis, Joe LeBlanc	<ul style="list-style-type: none"> • further discuss whitepine seed costs to see if any solutions are available to lower seed cost and increase use 	<ul style="list-style-type: none"> • To be presented at meeting
Barrie Phillips, Judi Beck, Jack Woods	<ul style="list-style-type: none"> • Set up a workshop for May, 2011 to discuss issues and opportunities and to inform a possible call for proposals 	<ul style="list-style-type: none"> • Underway

Agenda item 4 – Update 2011 sowing and class A seed use – Jack

Provincial sowing rebounded to about 235 million this year from 180 million last year. The use of select seed is also increased to about 148 million (14 million B+; 134 million Class A), the highest level yet both in numbers and percent (62%). Species trends will be presented.

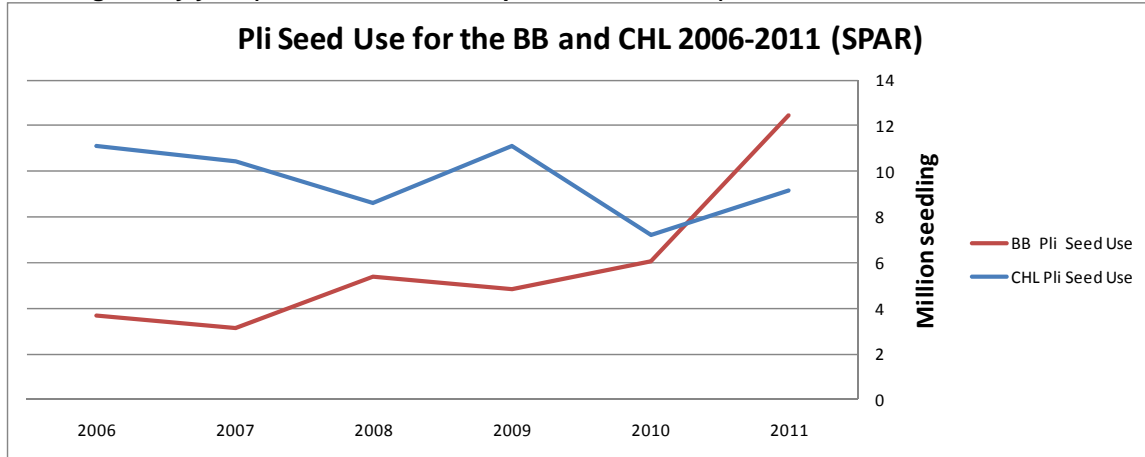
Good seed production years in most orchards in 2009 and 2010 helped. Lack of Class A Pli remains the primary barrier to meeting provincial objectives. Information on sowing trends by species and seed class will be provided, as well a progress to FGC objectives.

Agenda item 5 – Pli seed needs and inventories in the Big Bar and Chilcotin zones – Larry

The following information was provided by Matt Leroy, Tree Improvement Branch.

Big Bar zone seed Inventory		Chilcotin zone seed Inventory	
Seed class	Seedling equivalents	Seed class	Seedling equivalents
B	324	B	228
B+	103	B+	112
Total	427	Total	340

Seedling use by year (includes some overlap with the PG zone)



Agenda item 6 – Proposed Fdi orchards for the Thompson Okanagan zone – Tim

An opportunity exists to develop two orchards to meet seed needs for the high and low elevation Thompson Okanagan zones. Wild seed inventories for the TO zone are very low and seed is difficult to obtain. These seed planning units were identified in the 2009 ranking as a priority for program development.

Interest in the two orchards has been put forward by PRT and the MFML. Barry Jaquish (MFML breeder for Fdi) is reviewing data and making parent tree selections for these orchards. He will recommend an elevation cut-off that will lead to estimates of needed orchard sizes (expected to total about 2500 ramets total for both orchards - about 7 ha).

Discussion on the appropriateness of each orchard on each of the two proposed sites (PRT Armstrong and MFML – Kalamalka) is underway. Chief Forester Principles regarding public and private orchards will apply. If agreement cannot be reached between the parties, Council will be asked for a recommendation.

Agenda item 8 – Budgets and business planning for 2010/11

Expectations and process:

The Land Base Investment Strategy Tree Improvement Program allocation for the 2011/12 fiscal year is not confirmed at this time. However, it is likely to be in the range of \$3.1 to \$3.5 million (FY 2010/11 \$3.53).

The budget process involves the following five steps:

1. Subprogram and project committees develop business plans and budget recommendations for Council.
2. Council reviews all subprogram and project budget recommendations.
3. Council resolves shortfalls, balances among subprograms and projects, and recommends a final budget by formal resolution.

4. The FGC Program Manager forwards Council’s budget recommendation to the Provincial Chief Forester.
5. Final budget approval is given by the Deputy Minister.

Step 1 is complete. This meeting will focus on steps 2 and 3. The following summarizes subcommittee-approved budget requests, and options. As the final allocation of FIA funds is currently not known, this budget cannot be finalized. It is recommended that Council discuss options and identify how to proceed with final budget allocations when the FIA program total budget is known.

Tree Breeding subprogram – Barrie Phillips

Process:

Breeding program activities and budgets are presented to CTAC and ITAC, discussed, and a recommendation is forwarded from the TACs. The following table outlines recommendations from the CTAC and ITAC. These funds are managed through the MFR TIB.

**Breeding Subprogram budget for 2011/12 recommended by the CTAC and ITAC
\$ x 1000**

Species	Budget approved by TAC	Budget option 2 (5% reduction)
Coast		
Coastal D-fir	113	
Redcedar	154	
Yellow cedar	60	
Western hemlock	67	
Sitka spruce	60	
White pine - coast	72	
Broadleaves	0	
Amabilis fir	0	
Grand fir	0	
TOTAL COAST	526	500
Interior		
Lodgepole pine	140	
White pine - interior	22	
Interior spruce	49	
Interior D-fir	91	
Western larch	102	
Broadleaves	7	
TOTAL INTERIOR	411	390
Coast + interior	937	890
Salary	160	160
TOTAL	1097	1050

Operational Tree Improvement Program (OTIP) – Darrell Wood

Process:

The OTIP call for proposals process was unchanged from previous years. This included Species Committee and TAC recommendations, a Request for Proposals, submission of projects, review of proposals by committees, and presentation of a recommended list of projects to the FGC. The budgets listed below are recommended by OTIP Review Committees.

OITP proposed budget options:

Requested amount following review committee \$ recommendations	
Coast	\$ 115,000
Interior	\$ 650,000
Total Option 1 budget request	\$ 765,000
Option 2 – removes low-ranked proposals (scored 70)	\$ 730,000

Genetic Conservation Subprogram – Dave Kolotelo

Process:

Genetic conservation work is directed by a FGC-approved plan prepared in 2007. Activities are discussed by the GCTAC, and projects developed by the MFML (led by Jodie Krakowski), the UBC Centre for Forest Conservation Genetics (led by Sally Aitken), and the Tree Seed Centre (led by Dave Kolotelo).

The following subprogram budget options are recommended by the GCTAC. Further detail on budgets follows this table.

Group	Option 1	Option 2	Option 3
MFML Tree Improvement Branch (research)	\$87,000	\$75,000	\$63,850
UBC Centre for Forest Conservation Genetics	\$157,240	\$147,520	\$147,520
MFML Tree Seed Center	\$5,000	\$4,000	\$3,000
Total	\$249,240	\$226,520	\$214,370

2011/ 12 Projects and budgets proposed by the MFML Tree Improvement Branch research group (Jodie Krakowski)

Project description	Option 1	Option 2	Option 3
Ex situ conservation			
seed procurement for priority species, including relevant documentation	29500	26500	23500
seed processing to spec for TSC storage	8000	6000	5000
In situ conservation			
Population genetic analyses of model species to develop conservation guidelines for minor species lacking genetic data	43000	37000	30500
Report summarizing results of catalogue field verification	500	500	500
Inter situ conservation			
Technical report summarizing status of MFML genecology programs for 10 non-commercial tree species	3500	3200	2500
Meetings/conferences	2500	2000	1850
TOTAL	\$ 87,000	\$ 75,000	\$ 63,850

Seed-bank testing

Projects proposed by the Tree Seed Centre are for ex-situ conservation seed bank testing and to better understand the quality of seed obtained through GCTAC specific collections, donated research collections, and samples currently part of the seed bank. Knowing the quality of seed is necessary to determine the status of the seed bank, prioritize future ex situ collections, and determine what seed may be available for restoration purposes. Testing will be prioritized to species and or species X geographic areas with no (or low) levels of redundancy in the seed bank.

Recommended budgets for this work are:

Option 1 - \$5,000

Option 2 - \$4,000

Option 3 - \$3,000

Projects and budgets proposed by the UBC Centre for Forest Conservation Genetics (includes co-funding leverage).

The following table outlines recommended budget option for the UBC CFCG.

Project	PROPOSED BUDGET 2011-2012 From Genetic Conservation Subprogram - Option 1	PROPOSED BUDGET 2011-2012 From Genetic Conservation Subprogram - Option 2	2011-2012 Other sources of funding	Co-funding sources and comments
CENTRE FOR FOREST CONS. GENETICS				
AdapTree Genomics Project				
Total funding from other sources			1,336,824	Genome Canada, Genome BC, Alberta Innovates - Bio Solutions, Virginia Tech, USDA, FGC STTAC
Climate modelling	95,928	95,928		
Adaptive diversity in seed orchard lots	16,665	16,665		PhD student support. Laboratory and common garden will be covered by other sources.
Computing supplies	1,000	1,000		
Development of AdapTree climate-based seed zone pages for CFCG website	6,000	6,000		CFCG website needs to be updated and pages for the AdapTree project added
Climate change				
Testing climate change predictions for whitebark and lodgepole pine	2,000	0	0	Publication costs and Blackcomb assessment.
Modelling seed transfer options	0	0	42,420	STTAC Genecology
Genetic response to climate change (larch and cedar growth chamber expts)	0	0	7,455	STTAC Genecology - final 2 months
Non-Commercial species				
Genecology of Garry oak	5,000	5,000	0	Maintenance, measurement, manuscript preparation
Populations genetics and genecology of Pacific dogwood	1,000	1,000	0	Manuscript revision and publication
Other projects				
Genetic structure and conservation of managed interior spruce populations	10,000	5,000	12,000	NSERC Discovery; UBC 4-year fellowship to A. De La Torre
General CFCG expenses				
Extension	4,000	3,000		Travel to meetings, presentations, publications
Office, lab and computing expenses	4,000	3,000		
Total expenses	145,593	136,593		
UBC Overhead 8%	11,647	10,927		
TOTAL UBC CONTRIBUTION AGREEMENT	157,240	147,520		

SelectSeed Ltd. Business Plan and budget – Jack Woods

The SelectSeed Business Plan was sent as a separate document

Process:

SelectSeed develops and manages orchards through contracts to meet objectives set by the FGC. The SelectSeed Business Plan and the budget listed below were approved by the SelectSeed Board on February 25, 2011. Board members are Glen Dunsworth (Chair), Reid Carter, Russ Clinton, Jim Burbee, and Henry Benskin.

Projects:

See pages 11 and 12 of the Business Plan for long-term cash flow forecasts. Work includes:

- contract management of 14 seed orchards
- seed production and sales
- management services for the FGC
- meeting business and financial obligations for SelectSeed Company, and for the BC Forest Genetics Society

Budget:

A budget is presented in the following table. Options to reduce this budget are limited, as most costs are fixed by contract, however, there are options to reduce the operating capital held by the company. These appear in the budget options presented below. Seed production and sales are highly uncertain from year to year.

2011/12 budget by category (Table 6 from SelectSeed Business Plan).

Category	Total projected expenses / income
Expenses	
Orchard management costs	567,000
Propagation and holding	13,000
SelectSeed management and FGC support	256,600
NSERC Industrial Chair support	55,000
Crop production / seed extraction	123,400
Total Expenditures	\$1,015,000
Income	
Seed sales	451,000
Interest from investments	10,000
Total Income	\$461,000
Carry-over cash from prev. year	\$100,000
Total MYA support	\$454,000

Option 2: Option 1 less a further \$24k in operating capital = \$ 430,000

Option 3: Option 2 less a further \$54k in operating capital = \$ 400,000

A resolution approving the Business Plan is required to meet the terms of the SelectSeed Multi-Year Agreement

Extension – Diane Douglas (to be presented by Jack)

Process:

The Extension Technical Advisory Committee (ETAC) developed project lists and budget recommendations. ETAC also oversees project delivery. Work is carried out primarily by Diane Douglas (TIB) and by contractors. The projects and budget shown below are recommended by the ETAC. Reduced options would be discussed with ETAC members and adjustments made as advised.

2011/12 Extension Subprogram projects and budget

Project	Budget
Client Survey – in house, could require some interpretation assistance	\$2,000
Workshop (possibilities)	\$10,000
<ul style="list-style-type: none"> · Nutrient Analysis for Seed Orchards · Cone Collection for a wider audience · Seed and Seedling Workshop · Seed Orchard Pest Management Workshop · Extension meetings and presentations · Leverage with other groups and associations such as Whitebark Pine Ecosystem Foundation (Canada) who are planning a Whitebark pine workshop this next year 	
Publications:	\$8,000
<ul style="list-style-type: none"> · TICtalk · Extension notes · Develop “generic” presentation for Tree Improvement promotion for educators and future employers 	
First Nations and Tree Improvement	\$2,000
<ul style="list-style-type: none"> · Workshop · Publication 	
Total	\$22,000

Seed and Cone Pest Management – Jim Corrigan (Jack to present)

BACKGROUND:

The loss of the Chair and a senior member of the Pest Management Technical Advisory Committee (PMTAC) during 2010 caused substantial disruptions to the normal work schedule and activities of our Committee. Extensive re-staffing of the Committee occurred late in the past fiscal cycle, and suggestions for significant modifications to PMTAC operating procedures currently are on the table. Given this instability, the Committee felt that a relative ‘status quo’ position should be taken with respect to projects being put forward for FGC support in the upcoming fiscal year. We are requesting continued support for all in-progress projects from 2010-11, but did not solicit any proposals for projects to be started anew in the 2011-12 funding cycle. It is anticipated that the PMTAC will have an updated operating structure in place for the next fiscal year and that we will return to evaluating proposals for both new and continuing projects at that time.

Proposals submitted to the PMTAC have been evaluated by the Committee based on priorities outlined in its business plan. Proposals for work in 2011-12 and the associated budgets were requested and reviewed by the PMTAC at meetings on 10 & 17 January and 17 & 21 February, 2011. Proposals and budgets were finalised on 28 Feb 2011, and the formal budget request from

the PMTAC was submitted to the FGC on 1 March 2011 (see Recommendation and Table 1 below).

Total budget request for fiscal 2011-12 is \$130,555 which is 19% below the amount awarded for project support (ca. \$162 000) in the 2010-11 fiscal year.

PROPOSAL SUMMARIES:

1. Operational support for the BC Ministry of Forests, Mines & Lands pest management biologist provides funding to assist with conducting the Ministry's cone and seed pest management extension programs (materials, supplies, travel, and auxiliary technical support as needed).
2. Operational support for the BC Ministry of Forests, Mines & Lands seed and cone pest research laboratory supports staffing and day-to-day laboratory operations in the pest management research lab at the Kalamalka Forestry Centre (materials, supplies, relevant travel, and personnel).
3. The pesticides trials, done in collaboration with Crop Health Advising & Research Consultants, continue ongoing projects to find new, safe and effective formulations of pesticides for control of important seed and cone pest species. Results from these trials will be used to support applications for minor-use registrations made to the Canadian Pest Management Regulatory Agency (PMRA).
4. The Contarinia/Leptoglossus Visual Foraging Cues (Simon Fraser University) project will determine whether: i) conifer cones reflect polarized light, and ii) these two important pest species possess polarization-sensitive photoreceptors. *It is hoped that this research could lead to the development of a more effective and much needed trapping device that would improve our capabilities to monitor and manage some of the most destructive insects in seed orchards.*

2011/12 Pest Management Subprogram budget recommendation.

Projects	Amount
Operational Support for Ministry Cone & Seed Pest Biologist	26 880
Operational Support for Ministry Cone & Seed Pest Research laboratory	26 775
The Pesticide Trials	29 400
The Contarinia/Leptoglossus Visual Foraging Cues Project (SFU)	47 500
Total	130 555

Seed Transfer Subprogram – Lee Charleson

The seed transfer and genecology project review and delivery process was modified for the 2011/12 fiscal year. Genecology research undertaken by the MFML was removed from the call-for-proposals process that was implemented in 2009. It was replaced with a budget submission from the MFML Tree Improvement Branch research group and a budget-review process by the Seed Transfer TAC. A more limited call for proposals was made to non-MFML proponents.

The limited proposal call resulted in 5 project proposals. Of these, the STTAC review committee recommended full funding for 3, partial funding for 1, and rejection of 1. Budget totals are in the table below. One of the approved projects is contingent upon leverage with a Genome Canada proposal.

The Assisted Migration Adaptation Trial (AMAT) project is a significant component of climate-change genecology research. This trial is led by Greg O’Neill of the MFML TIB and has been previously funded through the Forest Science Program. For FY 11/12, funding is requested through the LBIS Tree Improvement Program.

Other MFML genecology projects are outlined in a plan submitted by TIB research staff. Total funding requested and STTAC-recommended options are shown below.

2011/12 Seed Transfer Subprogram budget recommendations.

Project	Option 1 (recommended)	Option 2	Option 3
Recommended projects from call for proposals	\$99,796	\$99,796	\$89,816
AMAT trial	\$233,000	\$203,000	\$182,500
MFML - TIB genecology projects	\$294,500	\$227,500	\$204,500
TOTAL	\$627,296	\$530,796	\$476,816

Genetic Resource Decision Support – Lee Charleson

The GRDS TAC has previously reviewed terms of reference for this subprogram (discussed by Council in September and December, 2010).

The following projects are recommended by the GRDS. Both would be delivered through the MFML TIB.

2011/12 Genetic Resource Decision Support project recommendations.

Project	Budget
MPB opportunity mapping – add TSAs with a cone collection theme	\$20,000
Contract support for climate based seed transfer work, spatial data requirements and seed planning	\$50,000
Total	\$70,000

Applied Tree Improvement and Biotechnology (UBC – El-Kassaby) - Jack

Process:

A steering committee (SC) provides guidance to the project leader (Dr. Yousry El-Kassaby), reviews plans and reports, and makes budget recommendations to the FGC. This Committee met March 2, 2011. Budget options presented here have been reviewed by the steering committee.

The following projects were approved by the Steering Committee. All are ongoing projects:

- Estimates of parental contributions and pollen contamination in western larch and Douglas-fir orchards
- Western redcedar parental contributions and selfing estimates in seed orchards
- Evaluating the effectiveness and accuracy of current orchard survey methods for estimating parental contributions

2011/12 Applied Tree Improvement budget recommendations.

Project description	Option 1	Option 2	Option 3
Lw project - PhD student support	20,000	20,000	20,000
Fdc project - MSc student support	17,000	17,000	17,000
Student assistance for DNA lab work (4 months)	12,000	8,000	8,000
Lab technicians (1.5 FTE)	33,000	33,000	33,000
Chemicals and supplies	45,000	33,100	24,000
UBC overhead (8%)	10,160	8,888	8,160
TOTAL	\$137,160	\$119,988	\$110,160

LBIS TIP 2011/12 budget options by subprogram

Subprogram	2010/11	Option 1 Requested	Option 2	Option 3
Genetic Conservation	\$248,000	\$ 249,240	\$226,520	\$214,370
Tree Breeding*	\$1,081,000	\$ 1,097,000	\$1,050,000	\$1,000,000
Operational Tree Imp. Prog.	\$684,000	\$765,000	\$730,000	\$730,000
SelectSeed Ltd.	\$543,000	\$454,000	\$430,000	\$400,000
Extension and Communication	\$20,500	\$22,000	\$19,000	\$16,000
Cone and Seed Pest Mgt.	\$162,000	\$131,000	\$125,000	\$125,000
Genecology and Seed Transfer	\$436,000	\$627,000	\$531,000	\$477,000
Genetic Resource Decision Sup.	\$0	\$70,000	\$50,000	\$40,000
Administration*	\$30,000	\$30,000	\$25,000	\$20,000
Subtotal	\$3,264,500	\$3,445,240	\$3,186,520	\$3,022,370
Incremental projects				
Applied Tree Impr. and biotechnology (YE-K UBC)	\$122,000	\$137,000	\$120,000	\$110,000
CLRS clonebank maintenance	\$60,000	\$85,000	\$60,000	\$50,000
Subtotal	\$265,500	\$222,000	\$180,000	\$160,000
TIB risk management	\$0			
TOTAL	\$3,530,000	\$3,667,240	\$3,366,520	\$3,182,370
Incr. cost to 25% U. overhead		\$62,000		
Difference	\$0	\$ (567,240)	\$ (266,520)	\$ (82,370)

Agenda item 9 – Genomics and climate-based seed transfer; Genome Canada call and – Sally Aitken / Rob

Sally Aitken (UBC Forest Sciences) will overview how genomics can contribute to the development of climate-based seed transfer information and policy. She is the principle investigator on a 3-year \$4.7mm Genome Canada proposal that will develop genomics information for CBST for Pli and Sx. This project is leveraged by some funding from the Genecology subprogram.

Rob will provide an overview of all forest genomics projects proposed by UBC faculty.

Agenda item 11 – Update on new technologies workshop – Jack / Barrie

Council requested a workshop to bring together people who might contribute information on issues and opportunities for new and applied technologies that could contribute to FGC objectives. Barrie Phillips, Judi Beck, and Jack Woods were tasked with this.

Judi has been replaced on the committee and Council by Raoul Wiart (CFS). Discussions have been held with the intent of putting out a call for interested people to meet at UBC in May. This workshop should be referred to as “New technologies”, rather than “biotechnologies”, as the latter may be limiting.

A call for this workshop is under development and will be released later in March.

It is important to stress to those involved that Council is seeking technologies with a high probability of supporting FGC objectives as stated in the Strategic Plan. The amount of money available for this type of work is limited, so managing expectations is also considered to be important. Opportunities for leveraging funds will be sought.