[Annex B to report entitled "*Infrastructure Stimulus Fund – Survey of Recipients*"]

The Infrastructure Stimulus Fund: Perceptions of Operations, Impacts and Possible Improvements

For: The Office of the Parliamentary Budget Officer

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Executive Summary

The Office of the Parliamentary Budget Officer was asked to prepare an analysis of the Infrastructure Stimulus Fund to obtain information that would suggest how a similar programme could be designed and delivered better in the future. In part, this does involve an implied evaluation of the current programme, but there are other dimensions to the analysis apart from conventional evaluation. A survey was conducted by Phoenix Strategic Perspectives, and there was an attempted census of all organizations receiving ISF funding. A strong response rate was obtained compared to industry standards, and a preliminary report on the results of that survey was written by Phoenix Strategic Perspectives.

Next, the survey data were taken and analysed in more detail. As well, aspects of the survey data were related to aspects of administrative data that are collected on ISF projects. That led to another report, and this executive summary capsulizes the results of that second report. It will be organized according to the main blocks of indicator variables that were used in the survey. These are:

- Satisfaction with administration and implementation of ISF
- The perceived impact of ISF projects on various dimensions with particular attention to the Incrementality of ISF projects compared to what would have been the case in their absence
- Perceptions of systematic technical biases in the approval of projects
- Details of the impact of specific projects chosen for more focused analysis
- Perceptions of ways in which the selection, design and implementation of an ISF type programme could be improved.

A highly summarized description of the results for each of these blocks of variables is provided below in the results section.

Results

Satisfaction with Administration and Implementation of ISF

The first set of indicators measured satisfaction with basic administrative, management and planning processes pertaining to ISF. We found that there is generally modest satisfaction with various aspects of these processes, but there is certainly variation around this basic pattern. There was a fair amount of province/territory variation in satisfaction with fund transfer processes with Alberta, Manitoba and Nunavut being low on this indicator and New Brunswick, Newfoundland, Northwest Territory and Yukon being relatively high. This simply means that there are administrative variations in the way ISF is perceived to function across jurisdictions. However, these variations could be a function of activities at more than one level of government. Interestingly, the number of projects associated with a recipient organization had no major relationship with the indicators, and the total value of all projects linked to a recipient organization had only weak influence on the

indicators. One might have thought that the complexity of a recipient organization's involvement with ISF would have more influence on the indicators. However, in general, ISF processes seem to be similarly perceived by those who have complex and simple relations with the programme. Alternatively, it was found that there were some relationships between the percentages of projects completed at a given point in time, and increased completion seemed to promote satisfaction. This probably means that many of the minor frustrations connected with ISF administration are worked out or put in perspective as projects progress. Finally, there was an indication that community centre/service type projects were negatively associated with satisfaction measures, and the reason for this is not clear. In summary, ISF recipient organizations tended to be moderately satisfied with ISF processes, and the specific substantive variations that appeared make sense but could only be understood with more detailed examination of specific cases

The Perceived Impact of ISF Projects on General Community Dimensions with Particular Attention to the Incrementality of ISF Projects

The second set of indicators reflected perceptions of impact of ISF projects in a number of general areas such as general community welfare, unemployment, earned income, environmental quality, alteration of construction prices and infrastructure deficit. Overall, respondents had a modestly positive view of impacts, but there was considerable variation. While responses indicating beneficial impacts tended to be dominant, there were many responses that indicated no impact or non-beneficial impacts. The results pertaining to perceived unemployment impacts are particularly worthy of note here given some of the goals underlying ISF. Many (33.3%) said that ISF had a beneficial impact on unemployment. Many also said its unemployment impact was neutral (43.3%) or negative (20.6%). Also on the positive side of the ledger, the structure of the responses tend to suggest that respondents were thoughtful in answering the questions as there is no sense that there is some routinized response pattern tending toward all good or all bad evaluations of ISF.

There were many bivariate findings of note. Without rehearsing all the details contained in the report, it is clear that there are major provincial/territorial variations on a number of the impact indicators. The important question is what importance does this have for future policy and programme design? These geographic variations will need to be considered further in terms of the mix of projects types and sizes in different jurisdictions. Also, there may simply be scale and regional labour market explanations for some of these variations. If this were the case, than future programmes similar to ISF may benefit from more fine grained design with respect to local conditions, project type and, perhaps, even variations in local management capacity.

The total number of projects and the total number of specific categories of projects had little effect on impact perceptions, similar to results for the previous set of indicators. However, also similar to previous results, some of the few project type influences that stand out arise from numbers of community centre/service projects. Increases in numbers of such projects produced some beneficial and some non-beneficial results. In this particular segment of the analysis, there were also some minor relationships between impact perceptions and numbers of solid waste

management projects. In light of the way these particular types of projects seem to stand out in parts of the analysis, it may well be that there is something about them that has a different fit with ISF than other project types. As we shall see later on, there is some evidence that solid waste management projects may not be an ideal focus for funding if a main goal is creating large numbers of reasonable quality jobs. Finally, the total value of projects per recipient organization has a number of small positive influences on several kinds of beneficial perceptions of impact.

Perceptions of Systematic Technical Biases in the Approval of Projects

The next set of indicators had to do with perceptions of systematic technical (as opposed to political) biases in the selection and approval of projects. Were there certain types of projects that were disadvantaged in the selection process? There is a substantial minority of respondents who thought there was some degree of bias in projection selection and approval. They may have viewed this either in terms of the types of assets dealt with in a project or in terms of time frames and planning for different types of projects. However, there was very little influence on these responses by the types of background variables we have used. To the extent that there were any sorts of relationships, it seemed that communities with more projects rather than less were more likely to perceive bias. Perhaps this just means that organizations with long lists of potential projects are more likely to encounter obstacles with respect to some of the projects.

Details of the Impact of Specific Projects Chosen for More Focused Analysis

The next set of indicators related to some of questions asked about a specific project in each recipient community or organization. Frankly, these turned out to be more fruitful and important than anticipated. The indicators have to do with the number of person years of employment created by a project, average gross pay associated with a person year, the extent to which the project was devoted to purely public infrastructure and the number of months a project was expedited as a result of ISF. Basic analysis showed that these indicators did indeed create significant jobs at reasonable salaries, mostly in the realm of purely public infrastructure and in notably expedited fashion as a result of ISF. This is all very positive with respect to the ISF programme.

Our background variables did influence these indicators in a number of ways. Related to this, this was the first set of indicators where we found not only interesting bivariate relations but also reasonably powerful multiple regressions. Projects located in some jurisdictions are much more likely than others to generate reasonably large numbers of well paid positions and be considerably expedited compared to what would have been the case in the absence of ISF. In addition, some types of projects were much more likely to create relatively large number of jobs and/or positions with good reimbursement. Solid waste management projects were particularly ineffective in that regard. Alternatively, public transit was very effective at employment creation and airport, highway /regional transit and port/cruiseship type projects were particularly effective in producing higher paid employment.

Considerably more (and more sophisticated analysis) would probably need to be done to completely unpack the implications of these findings. However, one interpretation of the implications might be that ISF funding should be directed more explicitly to some types of projects than others. Another might be that there are lessons to be learned from some of the jurisdictions that have produced the most effective results of projects. Another set of lessons to be learned might be that some organizations need different rules or greater assistance to effectively participate in an ISF type programme. Some of the preliminary analysis of detailed verbatim responses by respondents provides moderate support for these possibilities. However, that is not central to this report.

Perceptions of Ways in Which the Selection, Design and Implementation of an ISF Type Programme Could be Improved

Finally, we come to the results of some questions that asked respondent ways in which various aspects of ISF could be improved at the federal, provincial and municipal levels. In addition, there was a question asking how future programmes similar to ISF could be designed to achieve more beneficial impact.

There was a fair percentage of respondents who expressed ideas about improving project approval, planning and definition of impacts. However, the percentage was always less than half the responding organizations, and it became smaller as the point of reference for questions moved from the Federal, to the provincial/territorial and again to the municipal realm. In some ways, responses to these questions appear to tell a story similar that told by some of the question discussed at the beginning of the report. A portion of respondents do have questions and concerns about ISF, but, by and large they are not unfavourable in their assessments of it.

Depending on which process people focused on, the following emerged as suggestions with some frequency:

- Better time frames
- Faster approval
- Fewer reporting requirements
- Longer term funding
- Funding of design and planning activities
- A recognition that impacts are difficult to define and measure
- A desire to have an expanded range of projects eligible for funding

It is likely that these results could be elaborated usefully through a more fine grained consideration of the open ended responses to some questions. It is evident that some respondents devoted considerable thought to their perspective on programme improvement.

Final Summary

In closing, it seems fair to conclude that IFS is a reasonably well run funding programme and that it was perceived to produce some of the benefits that it was intended to produce. Yet, there are geographic, substantive and scale influences that determine variation in assessments of ISF. These causes of variation may provide a way of beginning to consider how future similar programmes could be more effectively targeted. In working through the implications of this, it may be that there are some elements that should be added to a future programme and others that should be removed. Certainly, there are those who see such programmes primarily in terms of expediting the creation, expansion and renewal of needed infrastructure. Others may see such programmes primarily as an instrument of creating economic stimulus with a useful secondary role in creating infrastructure or other outputs. At some point, it will be useful to engage infrastructure policy as a long term framework that, at certain times, may have some particularly useful derivative economic benefits. In conjunction with this, more specialized thought may have to be given to job creation/preservation policy and the instruments that can be quickly called into action during economic downturns in service of such a policy.

As a final methodological note, it should be said that the perceived value of project specific data was enhanced in light of this analysis. That does not mean that more general questions asking for overviews of community welfare impacts or impacts of sets of projects are without value. Indeed, they often proved to be of great value in this report. However, project specific questions proved to be easier to link to reasonably obvious independent variables. Such expanded explanation for general community welfare summaries and overviews of satisfaction will require other information and, perhaps, the passage of time to allow perceptions and their causes to stabilize.

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I.Introduction and General Overview of the Research

The Office of the Parliamentary Budget Officer was asked to prepare analyses on the Infrastructure Stimulus Fund (ISF). The primary goal of such analyses was to determine how such a programme might perform were it to be implemented again in some future context. Ultimately, this led to a more specific set of program characteristics that would define more detailed indicators for analysis. To a great degree, the empirical basics of these indicators have been fleshed out in a preliminary report produced by Phoenix Strategic Perspectives. So, interested parties can already find a good sketch of important indicators of ISF activities in that preliminary report. Some of the main types of indicators that arise in assessing the performance and future applicability of a programme of this kind are:

- Satisfaction with administration and implementation of ISF
- The perceived impact of ISF projects on various dimensions with particular attention to the Incrementality of ISF projects compared to what would have been the case in their absence
- Perceptions of systematic technical biases in the approval of projects
- Details of the impact of specific projects chosen for more focused analysis
- Perceptions of ways in which the selection, design and implementation of an ISF type programme could be improved.

The preliminary report already provides good background on these and other indicators at general level. It will be the purpose of this report to look at some of these indicators in a bit more detail and to see how well they relate to certain independent background variables, sometimes referred to as "drivers." We will look at each indicator and its possible relations with other variables in the order outlined above, and that is the order of this report. Other structures for the report are possible, but this one does have logical coherence in that it follows the general order of the questions in the survey instrument used in this project.

While this report provides a great deal of information, it is far from being the last word on the relevant data. There is also room to refine and extend techniques, alternative relations to be explored and additional variables to be considered. A certain amount of schematic selectivity had to be employed in producing this report in order to keep it within reasonable bounds. Nevertheless, this report does provide a good picture of ISF programme indicators of performance and suitability as well as a basic sense of how they relate to some other variables.

II. Characteristics of the Data and Methods

The data come from two sources. First, a survey was done that targeted all the organizations that were recipients of ISF funding. Second, data were extracted from the administrative data base which is used to monitor ISF projects and recipient organizations. Ultimately, these two types of data were merged to create a primary data set. Some comments on each of the data sources are provided below.

Survey Data

In the case of the survey data, there were 1143 organizations that were eligible to receive ISF grants. This number is based on the administrative data base (as of mid 2010) that served as a sampling frame for the survey. Many of these recipients were municipalities, but there other kinds of organizations as well. For example, in some places, all funds had to at least nominally be routed through provincial agencies. In some cases, charitable organizations and local community groups were involved as recipients. There was some discussion that it would be sufficient to represent these organizations using a non-exhaustive probability sample. However, ultimately, it was determined that the best approach would be to try to capture data from all recipients. In effect, the ideal goal of the survey would be a census of recipient organizations. Of course, not every census has the same characteristics as a mandatory population census. So, non-response was experienced in the field work. Nevertheless, compared to many other recent surveys, the response rate was quite good. Initially, it was possible to define potential contact points for 1129 recipient organizations.[1] 644 recipient organizations responded during the period of June 8 to August 3 of 2010. The field work took place in two waves. The gross response rate is about 57 percent. This is translated into a net response rate of 58.6 percent using a base of 1101 organizations that agreed to complete the questionnaire during the telephone recruitment phase. When one considers that some of the organizations that ultimately received funding were probably not at an advanced state of dealing with the projects and when one considers other technical issues, in some ways this is a rather conservative representation of the response rate. Field work went very well.

Related to this, and one of the interesting features of initial data structure was that the response rate outside of Quebec was actually much higher (69.9 percent) than 58.6 percent while the response in Quebec was much lower (32.6 percent). There are various factors that likely caused this. However, one of them is certainly that Quebec projects tend to come on line and be activated somewhat later than other projects. Thus, at the time of the survey, it might well be the case that organizations in Quebec did not think they had enough information to respond concerning the projects.

[1] The difference between 1143 and 1129 as a population listing is a result of the fact that some organizations were not in the administrative data system when the sample frame was defined and, probably, a result of the difficulty of finding contact points for early stage projects. 1143 was the number used for weighting adjustments, but 1129 is used to determine gross response rate figures. 1101 is used to determine net response rate pertaining to all those who at least agreed to complete the questionnaire during recruitment.

One of the implications of the regional difference in response rate is that some adjustment for regional non-response would be useful. A weighting system was developed that accomplished this. These weights will be applied to ensure that each province/territory is reflected in results in direct relation to the percentage of all projects occurring in the province/territory as revealed in the administrative data base.

Another aspect of the survey data is that one part of the questionnaire focused on a particular project in each recipient organization. In understanding this feature of the data it should be noted that a given community could receive funding for more than one project, and some larger cities received funding for many projects. As a result of this, a system was worked out for randomly selecting a project in each community or recipient organization. Yet, since there was variation in the number of projects for community, ideally this should be taken into account in analysis. To accomplish this, another set of weights was developed that reflected the probability of a given project being chosen in light of the number of projects from which it was chosen and also reflecting the proportionate importance of different types of projects in the larger population of projects as revealed in the administrative data base. The first element in the weighting is an adjustment for differing probabilities of project selection, and the second element may be thought of as a very minor adjustment for differential non-response. There was some consideration of developing an even more complex set of weights for project oriented analysis, but certain features of the large numbers of cells in adjustment tables suggested this might not be beneficial. In any event, weights reflecting the probability of selecting a project and the overall prevalence of different types of projects are brought to bear when analysis is focused on survey questions to a specific project-usually referred to as "Section 3 Questions" in light of their placement in the survey instrument.

Administrative Data

The records system for the IFS Programme contains information on the 1143 recipient organizations as well as the 3912 projects funded in those organizations. This data has several layers and stages to it in that some aspects of it updated on a quarterly basis as organizations report back to the Federal Government.[2]

Of course, basic identifying and classifying data are contained in the administrative data base. This includes such things as province in which a project is located, local or provincial organization responsible for a project, the name of the project, the category of asset being produced in the project, the nature of the project in terms of whether or not it is a new, rehabilitated or expanded asset-and so forth. In addition, there is basic financial information concerning the dollar value of a project and the relative shares of the different levels of government contributing to the project. There are also basic dateline variables that record such things as the start date of a project, the date of first tendering of a contract, the intended end date of the project and similar indicators.

[2] Note that the administrative data base fluctuates slightly as to home many recipients and projects were involved in ISF. This just represents final refinements in the data base as projects and communities are approved. We are using figures and administrative data that are very close to in time to the conduct of the survey. In any event, once the programmed reached its third reporting period fluctuations in numbers of cases would have been very minor.

Among the variables that are updated in the quarterly reporting process, one potentially important variable is the estimated percentage of the project completed at the end of a given quarter.[3]

Major portions of this administrative data will be useful in our analysis. In particular, some of this information can be used to analyse, classify or verify aspects of the Section 3 information generated by the questionnaires. It will be recalled that Section 3 data pertain to aspects of a specific project associated with a given recipient organization. In addition, we can combine aspects of the administrative data to create an aggregate picture across all projects associated with a recipient organization. These aggregated variables can be used as contextual variables to explain various aspects of survey responses. In fact, for the purposes of this report, this role as aggregate contextual variables is the more common use of this information.

As has been implied in preceding comments, some of the variables in the administrative data will be merged with the survey responses to create an overall data base for those organizations and projects that were covered by completed questionnaires. Sometimes, we will look at survey data on its own, and sometimes we will look at relations between information from the two data sources.

Methods

Basically, we will begin by looking at each major indicator variable or set of such variables that we noted earlier as being of central interest in measuring the design and performance of ISF. We will do this using a series of increasingly powerful techniques on a given type of indicator, and then move on to apply the same series of techniques to the next major type of indicator. Each major indicator will be examined separately, and some basic commentary on its implications will be provided. In some cases, analysis was done but not reported in detail because of limited problems affecting certain variables.

The initial part of a series of analyses will look simply at each indicator on its own. As an extension of this, we will also see whether or not the indicators can be meaningfully combined into some more complex and richer form that is still useful. This will be accomplished with techniques such as principal components analysis.

We will then proceed to look at how an indicator or set of indicators relate to some very basic background variables. For example, does the province/territory in which a project is located have an effect on its impact and performance? Does the type of asset or infrastructure resulting from a project have an impact on indicators? This is advancing into bivariate or two variable at a time analysis, and this can be pursued using basic table, correlational and average difference analysis. If our earlier principal components analysis of main indicators works well, the performance of those components may also be examined here in relation to basic background variables.

We will then move on to multivariate analysis in which we take another look at a given indicator or set of indicators of ISF performance as a function of more than one independent variable at a time.

[3] As will be seen, two versions of this percentage complete variable were used in analysis. While the variable showed some promise, its usefulness was affected by non-reporting or missing data issues.

This will involve the use of various forms of regression analysis. Again, it was considered that the dimensions produced by principal components analysis might also be analysed here as well. However, this did not turn out to be the most efficient way to proceed with the variables of main interest. Looking ahead to the results of this, note that we are not able to pursue multiple regression analysis as far as desired because of missing data or reporting issues. Interestingly, these issues were more extreme in that part of the data which was derived from the administrative data base. However, it must be kept in mind that any data set has its problems pertaining to missing data, and sometimes this simply arises from non-response or non-provision of information.

Once we have done the above for one type of indicator, we will then repeat this process for each major type of indicator noted earlier.

Let us also note that we will use statistical significance in presenting some of our results. When we do use significance indicators, we will designate the .05 or less range of significance as indicative of conventional significance. Findings within the .05 to .1 range will sometimes be referred to as being marginally or near significant. However, significance indicators must be regarded as playing a different role here than they do in a great deal of ordinary sample survey analysis. Much of the data are based on an attempted census rather than a conventional probability sample. Significance statistics are really provided as an "as if" frame of reference. In reality, the true precision and significance of the results are greater than what any conventional sampling precision indicator for samples of a similar size would indicate because of the attempted census aspect. Also, even if we viewed this as a probability sample as opposed to a census with some non-response, it would be incredibly precise simply because it would be based on finite population sampling on a very large scale. The question of accuracy/bias as opposed to precision or significance is another matter, but it will not be the main focus of this paper. Some time was spent on verifying estimates from the survey data in relation to administrative data where variables were similar. The results will not be reported in detail here. However, the limited verification that was undertaken indicated extremely good accuracy and thus limited importance of survey non-response. Nevertheless, this does not guarantee that this would be true for variable of interest.

Of course, throughout this report, effort will be made to show its implications for understanding ISF design, impact and performance. Yet, there is much more that could be said on those matters.

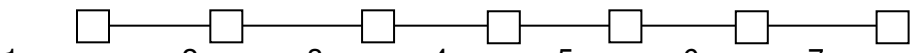
III. Satisfaction with Administration and Implementation of ISF

Basic Information on Individual Questions

Near the beginning of the questionnaire, there is a series of questions about satisfaction with basic application and administrative timing issues. These are the first indicators that we will consider, and they are worded as follows:

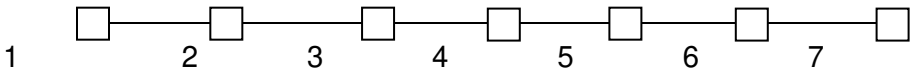
1. Please indicate your level of satisfaction with each of the following, using a 7-point scale, where '1' is extremely dissatisfied, '7' extremely satisfied, and '4' neither satisfied nor dissatisfied. PLEASE PROVIDE YOUR RESPONSE BY CHECKING THE APPROPRIATE BOX BELOW.

   a) The timing of project approval processes.



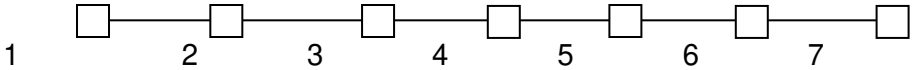
1	2	3	4	5	6	7	
Extremely Dissatisfied						Extremely Satisfied	☐ Don't Know

   b) The process leading from ISF project approval to the construction start date.



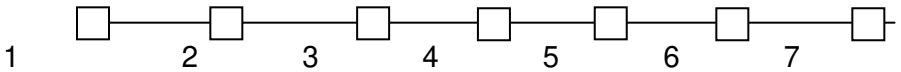
1	2	3	4	5	6	7	
Extremely Dissatisfied						Extremely Satisfied	☐ Don't Know

   c) The timing of fund transfers for ISF projects from higher-level governments.



1	2	3	4	5	6	7	
Extremely Dissatisfied						Extremely Satisfied	☐ Don't Know

   d) The environmental impact approval process for ISF projects.



1	2	3	4	5	6	7		
Extremely Dissatisfied						Extremely Satisfied	☐ Don't Know	☐ Not Applicable

The average values of responses to these items are noted in the next table. There is nothing particularly remarkable about these means. Basically, average responses were slightly above neutral on the positive side of satisfaction. It is noteworthy that fewer people provided responses to the items on relations with higher levels of government and environmental impact approval. This may simply be a function of the number of organizations involved in particular types of projects needing certain kinds of approval.

Although we will not report on this in detail, a principal components analysis of the 4 items was conducted, and we found that there was very strong component that summarized much of the variation in the questions. However, because of the missing value issues principally created by two of the items, it is not advisable to save the component scores and use them in the core of this analysis.

Table 1: Mean Scores of Satisfaction with Various ISF Administrative Processes

		1. SATISFACTION: The timing of project approval processes.	1. SATISFACTION: The process leading from ISF project approval to the construction start date.	1. SATISFACTION: The timing of fund transfers for ISF projects from higher-level governments.	1. SATISFACTION: The environmental impact approval process for ISF projects.
N	Valid	619	611	455	300
	Missing	25	33	190	344
Mean		4.81	4.94	4.55	4.79

Note that respondents were asked to indicate how the application process and related processes could be improved. They had the opportunity to provide multiple open-ended responses on this, but, in reality, very few went beyond a single response. In light of that, we simply summarize the primary open ended responses in Table 2.

Table 2: Responses to question 2 phrased as, "If you have any suggestions on how the application and/or approval processes could be improved, please provide them below. If you need more space, please add an extra page."

	Response Categories	Frequency	Percent	Valid Percent	Cumulative Percent
	Better time frame/quicker/efficient approval process	85	13.1	30.5	30.5
	Longer time frame to submit application/ready project	44	6.8	15.7	46.1
	Shorter time frame between approval and receipt of funding	20	3.2	7.4	53.5
	Approval made before construction season/earlier	12	1.8	4.2	57.7
	Difficulties experienced with electronic submission	6	.9	2.1	59.8
	More information provided/better communication	42	6.5	15.0	74.8
	No suggestions/satisfied (all positive mentions)	49	7.6	17.7	92.5
	Advanced funding to help planning/design process	6	.9	2.1	94.6
	On-going funding/funding based on per capita allocation	3	.5	1.2	95.7
	Reduce/eliminate difficult/unrelated requirements	6	.9	2.1	97.8
	Other	6	1.0	2.2	100.0
	Total	278	43.1	100.0	
Missing	NO RESPONSE	366	56.9		
	Total	644	100.0		

In the above table, we see that fewer than half volunteered any response, and even some of those volunteered responses simply suggested that everything was working fine. The only substantively interesting responses are general and have to do with improving the time and the general efficiency of the application process. As we shall see in subsequent results, there is a general sense that this programme is reasonably well run. Organizations can always ask for improvements in process, but their concerns do not seem extreme or detailed.

Bivariate Perspective

Now, we will consider how other variables impact on the four indicators. We will use mean comparisons and correlations to accomplish most of this. Details will only be presented for those findings that appear to have some importance relative to the overall mass of findings. One background or driver variable that we will always want to consider is province/territory in which a particular organization is located. In this regard, consider the next table.

In that table, we see the average/mean values for the four variables of interest across the various provinces and territories. Although there is certainly some variation in means across provinces, for the most part it is not dramatic. If we were applying conventional significance tests to this data, only one variable exhibits conventionally significant differences in means across jurisdictions. The item pertaining to fund transfers from higher levels of government has significant mean differences at the .000 level. Alberta, Manitoba and Nunavut (1 project only) seem particularly low in their satisfaction levels on this item. New Brunswick, Newfoundland, Northwest Territories and Yukon Territory (1 project only) seem relatively high on this indicator. Nevertheless, the overall pattern here is that of a programme that runs reasonably well and not dissimilarly across the country. This pertains to elements that are within the domain of federal responsibility as well as the activities of other levels of government and other actors. As we shall, on some indicators a lack of substantial or significant variation across categories is reflective of a reasonably homogenous and well run programme.

Table 3: Mean Value of Satisfaction with ISF Administrative and Management Processes By Province/Territory

PROVINCE/TERRITORY IN WHICH A GIVEN RECIPIENT ORGANIZATION IS LOCATED		1. SATISFACTION: The timing of project approval processes.	1. SATISFACTION: The process leading from ISF project approval to the construction start date.	1. SATISFACTION: The timing of fund transfers for ISF projects from higher-level governments.	1. SATISFACTION: The environmental impact approval process for ISF projects.
AB	Mean	4.71	4.98	3.75	4.70
	N	48	48	40	29
BC	Mean	4.78	5.10	5.22	4.75
	N	79	80	58	42
MB	Mean	4.33	4.96	4.00	4.42
	N	25	25	17	18
NB	Mean	5.50	5.88	5.83	5.80
	N	5	5	4	3
NF	Mean	5.50	5.83	6.17	5.40
	N	5	5	5	4
NS	Mean	3.71	4.71	5.20	5.25
	N	6	6	5	4
NT	Mean	5.29	5.29	5.60	5.25
	N	6	6	5	4
NV	Mean	4.00	3.00	4.00	6.00
	N	1	1	1	1
ON	Mean	4.81	4.95	4.59	4.87
	N	246	244	212	112
PE	Mean	4.71	5.29	5.20	5.20
	N	4	4	3	3
QC	Mean	4.91	4.82	4.23	4.68
	N	187	179	101	76
SK	Mean	4.00	3.71	5.20	3.75
	N	5	5	4	3
YT	Mean	6.50	6.50	6.00	5.50
	N	1	1	1	1
Total	Mean	4.81	4.94	4.55	4.79
	N	619	611	455	300

We then considered a variety of other background variables that might drive or influence these four satisfaction indicators. In particular, we looked at their correlation with the number of projects associated with a given recipient organization. Perhaps large variations in the complexity of organizational involvement in ISF would affect satisfaction. We looked at the correlation between the indicators and the total value of all projects going to a given organization. We looked at the correlation between the indicators and a series of variables reflecting the number of each type of project supported in a given organization. Here, by type, we refer to the 14 category classification of the types of assets impacted by projects. We then considered the correlation between these indicators and a variable reflecting the average percentage of project completion across all projects for an organization as of about June 30, 2010. Perhaps satisfaction would change as experience with completion varied. In general, we find very few relationships that approached descriptive or hypothetical inferential importance. The relatively strong relations we did find would only be seen as strong in the context of micro data analysis, and they do provide a moderately interesting picture which we will describe below. Note that some of the drivers or background variables we refer to in this paragraph are largely created from the master administrative data base. So, this is an example of analysis linking survey data to administrative data.

First of all, the number of projects associated with a recipient organization did not come close to having any sort of important relationship with any of the four indicators of administrative satisfaction. The influence of total value of all projects for an organization was similarly weak with one very minor exception. There was a nearly significant (sig.=.062) relationship between the total value of projects and satisfaction with timing of project approval. The correlation coefficient was only negative .075, but, compared to other relations, this was relatively notable. It suggests that there is very minor tendency for satisfaction with the approval process to decrease as the value across all ISF projects for a recipient organization increased. Still, this is quite weak and only worth comment in light of the weakness of other influences and relations.

When we look at the 14 counters of project type by asset type involved, we only find one area where notable relationships exist with the satisfaction measures. This involves the influence of the number of projects linked to community centres and community services. This stands out very clearly against the backdrop of dozens weak relationships. Specifically, we find the following with respect to the correlation between the number of projects involving community centres and:

- Satisfaction with timing of approval process
  r = -.203 , sig. .000

- Satisfaction with the process leading from project approval to construction start date
  r = -.189. sig. = .000

- Satisfaction with the timing of fund transfers from higher level governments
  r = -.238, sig. = .000

- Satisfaction with the environmental impact approval process for ISF projects
  r = -.043, sig. = .462

So, in 3 out of four relationships we see that the number of community centre/ service projects had a negative relation with administrative satisfaction indicators. The fourth relationship is not significant, and this likely arises from the fact environmental approval would not be a major concern in a fair proportion of these types of projects and related missing data issues. Keeping in mind that we are dealing in part with micro data and that other relationships encountered thus far tend to be consistently weak, these findings are worthy of attention. Apparently, ISF projects involving community centres and services encountered (objectively or otherwise) greater difficulties than other types of projects in a number of phases of administration. As always, it should be kept in mind that various actors are involved in these administrative processes, and it is not just a question of saying that the Federal Government has sole influence in these areas.

Finally, we consider the influence of the average percent complete of projects associated with a recipient organizations as of June 30, 2010 (end of third reporting period for ISF). We did find some relatively useful results here, and they are presented in Table 4.

Table 4: Correlation Between Satisfaction with ISF Administrative and Management Process Variables and Average Percent of All A Given Recipient Organization's Project Completion Rates

INDICATOR VARIABLES		AVERAGE PERCENT COMPLETE FOR ALL PROJECTS ASSOCIATED WITH A GIVEN RECIPIENT ORGANIZATION RECORDED AROUND THE END OF THE THIRD REPORTING PERIOD
1. SATISFACTION: The timing of project approval processes.	Pearson Correlation	.085
	Sig. (2-tailed)	.081
	N	422
1. SATISFACTION: The process leading from ISF project approval to the construction start date.	Pearson Correlation	.212**
	Sig. (2-tailed)	.000
	N	417
1. SATISFACTION: The timing of fund transfers for ISF projects from higher-level governments.	Pearson Correlation	.175**
	Sig. (2-tailed)	.001
	N	333
1. SATISFACTION: The environmental impact approval process for ISF projects.	Pearson Correlation	.056
	Sig. (2-tailed)	.400
	N	225
	Sig. (2-tailed)	
	N	432

The relation between percentage completion and satisfaction with the approval process is quite weak but in the range of marginal significance with significance levels being between .05 and .1. There is a weak tendency for satisfaction with the approval process to go up as the average percentage of projects completion goes up. As the average percentage of completion goes up there is a stronger tendency for satisfaction with the process leading from project approval to construction start date to go up. There is a slightly weaker but significant tendency for increases in average project completion to lead to increased satisfaction with funds transfer processes. Alternatively, the satisfaction with the environmental impact approval process is negligible.

In three out of four cases, average percentage of project completion has a more marked impact on satisfaction indicators than is typical of most relations explored thus far. Again, the reader used to working with aggregated data should keep in mind that truly strong patterns are often hard to find in micro data or partially micro data oriented analysis.

Substantively, the findings just noted indicate that satisfaction measures are partly a result of frustrations relating to start-up and early stage project obstacles. Once projects begin to proceed to completion, some of these frustrations appear to abate. Again, this seems to suggest that ISF is reasonably well administered by various actors, but it is not free from the usual anxieties of time critical program and expenditure activity. To foreshadow the use of this variable in later analysis, it should be noted that the percentage complete variable has an unusually large number of missing values due in the version of the administrative data base we examined. In some cases, it would be reasonable to assume that these blanks in the administrative data correspond to zero percent complete and pertain to late start projects. However, we cannot definitively make this assumption. Unfortunately, that restricts the use of this variable to bivariate analysis as including it in a regression would reduce the number of useful cases without making some rather heroic assumptions and imputations.

Multiple Regression

The next step in our exploration of these indicators is to try to explain them using linear multivariate regression. Basically, we did experiment with a wide variety of regression models in this area, but none of them had overwhelmingly explanatory power. For example, usually initial R Squares were in the 5 to 10 percent range, and adjusted R Squares would usually be lower than that.[4] Again, this is not surprising with micro data, but we are not achieving high levels of prediction of the indicators in question. Furthermore, the regressions did not illuminate our generate findings above and beyond what are already apparent from simpler forms of analysis. So, it was decided not to include them in the details of this report for this set of indicator of variables.

[4] As a very minor point for those who are interested in such things, since this project should either be viewed as a census with some non-response or a powerful example of finite population sampling, it may well be that the ordinary R Squares have more utility than is normally the case.

Concluding Comment on Preliminary Process Variables

We have seen that there is generally modest satisfaction with various aspects of processes relating to the administration and management of ISF projects, but there is certainly variation around this basic pattern. Notable bivariate findings were:

- Respecting satisfaction with fund transfers from higher levels of government, Alberta, Manitoba and Nunavut were notably low on this indicator while New Brunswick, Newfoundland, Northwest Territories and Yukon Territory notably high on it.
- The number of projects associated with a recipient organization did not have an important relationship with any of the four indicators of administrative satisfaction.
- The influence of total value of all projects for an organization was similarly weak with one very minor exception. There was a small negative tendency for increases in this variable to be associated with decreases in this type of satisfaction.
- One of the clearest bivariate relationships was the influence of the number community centre/service projects associated with a community on each of the four satisfaction indicators. Increases in this type of projects were negatively associated with each of the indicators. Albeit, the relationship was much weaker in the case of satisfaction with environmental approval. In light of this, there are some unanswered questions about how community centre/service oriented projects fit into ISF? Did they encounter special problems?
- Finally, the average percentage of project completion by recipient organization had a positive impact on all indicators. In all cases, except satisfaction with environmental approval processes, these influences were approaching conventional nominal significance. Although one may debate the relative importance of causal paths involved here, being further along with projects seems to increase satisfaction with administrative processes.

IV. The Perceived Impact of ISF Projects on General Community Dimensions with Particular Attention to the Incrementality of ISF Projects

Basic Information on Individual Questions

This section of the paper focuses on dependent variables that come from a fairly long and complex part of the survey. So, in the interests of providing a definable profile to the results, we must be a bit more selective in deciding what will be included in analysis and what will not. However, other matters of interest can be examined in subsequent notes and extensions. What we will do hear is provide a picture of the main indicators of ISF impact on community welfare and well-being and on some of the drivers of those indicators. It is in this part of our comments that we begin to see perceptions of the most general kind of impacts of ISF.

The first set of variables that is central to this general assessment of impact is found in the third series of questions in the survey. They read as follows:

3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas listed in the table below?

	Increased	No net impact	Decreased
… the general welfare of your community.	☐	☐	☐
… unemployment levels in the community.	☐	☐	☐
… earned income in the community.	☐	☐	☐
… the environmental quality of the community.	☐	☐	☐
… prices in the construction sector and related sectors.	☐	☐	☐
… the infrastructure deficit of your municipality/organization.	☐	☐	☐

Note how these questions focus on the incremental effect of ISF projects. The basic pattern of response to these items is provided below.

Table 5a: Response Distribution for 3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the general welfare of your community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	562	87.2	88.9	88.9
	No net impact	54	8.4	8.5	97.4
	Decreased	16	2.5	2.6	100.0
	Total	632	98.1	100.0	
Missing	NO RESPONSE	12	1.9		
Total		644	100.0		

Table 5b: Response Distribution for 3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: unemployment levels in the community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	132	20.6	21.1	21.1
	No net impact	279	43.3	44.6	65.7
	Decreased	215	33.3	34.3	100.0
	Total	626	97.2	100.0	
Missing	NO RESPONSE	18	2.8		
Total		644	100.0		

Table 5c: Response Distribution for Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: earned income in the community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	360	55.9	57.8	57.8
	No net impact	250	38.8	40.1	97.8
	Decreased	14	2.1	2.2	100.0
	Total	623	96.8	100.0	
Missing	NO RESPONSE	21	3.2		
Total		644	100.0		

Table 5d: Response Distribution for Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the environmental quality of the community.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	444	68.9	71.2	71.2
	No net impact	173	26.9	27.7	98.9
	Decreased	7	1.1	1.1	100.0
	Total	624	96.8	100.0	
Missing	NO RESPONSE	20	3.2		
Total		644	100.0		

Table 5e: response Distribution for Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: prices in the construction sector and related sectors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	185	28.7	30.0	30.0
	No net impact	402	62.4	65.1	95.1
	Decreased	30	4.7	4.9	100.0
	Total	618	95.9	100.0	
Missing	NO RESPONSE	26	4.1		
	Total	644	100.0		

Table 5f: Response Distribution for Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the infrastructure deficit of your municipality/organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Increased	99	15.4	16.0	16.0
	No net impact	146	22.7	23.7	39.7
	Decreased	373	57.9	60.3	100.0
	Total	618	96.0	100.0	
Missing	NO RESPONSE	26	4.0		
	Total	644	100.0		

At first glance, these basic results portray quite a positive picture of ISF projects. 88.9 percent indicate that the projects incrementally increased the general welfare of the community. 34.3 percent indicate that the projects decreased unemployment, and 44.6 percent said it had no net impact on this dimension. 57.8 percent said that the projects incrementally increased the earned income in the community while 40.1 percent said there was no net impact in this regard. 71.2 said the projects incrementally increased the environmental quality of the community while 27.7 percent said it had no net impact. 30 percent said that the projects had probably increased prices in construction and related sectors, but 65.1 said there was no net impact. This question reflects long established concerns that major subsidy of construction and infrastructure may adversely shift prices and resources. The majority think that there was not a major upward shift in prices due to the projects. 60.3 percent responded that the projects decreased the infrastructure deficit of their communities, and 23.7 percent said there was no net impact. Interestingly, 16 percent said the infrastructure deficit was increased.

This likely arises from a realization that, in some cases, infrastructure projects have long term implications that require yet more infrastructure.

Notwithstanding the generally positive indications of these results, they deserve a little more elaboration in terms of the central goals of ISF and what some might say are limitations of the data. First of all, note how several of the indicators had a substantial distribution of cases over at least 2 categories. This is very powerful proof of the respondents' willingness to provide some degree of analytic background to their responses as opposed to just providing *pro forma* optimistic or pessimistic responses. This speaks to the general usefulness and quality of these data and related analysis. Having said that, these indications of quality also have implications for some of the main goals of ISF.

Certainly, one of the key purposes of Canada's Economic Action Plan in general and ISF in particular was the creation and preservation of jobs. Remember that 44.6 percent said that ISF had no incremental impact on unemployment in their communities, and 22.1 percent said that it had increased unemployment. Even though the remaining 34.3 percent said that unemployment was decreased, one must ask how these results reflect on job creation and related goals.

Part of the answer is a technical answer for those respondents who may be aware of such things. "Jobs created" is not the same as the technical unemployment rate. So, it is conceivable that jobs can be created or preserved, and unemployment can remain unchanged because of changes in the number of people seeking jobs or other factors. Whether or not respondents understand such things, it is also the case that there may be some degree of response confusion as respondents consider the resonance of the terms with negative connotations like unemployment in relation to indicators of decrease. Such issues often exist to a limited degree in survey data. In all likelihood, these are relatively minor qualifications to results that suggest that ISF had some downward impact on unemployment, but this was not the most powerful outcome of ISF. We should keep this in mind as we encounter other indicators relating to labour force phenomena and ISF.

Looking into the interrelations of these 6 indicator variables we find some very interesting results that both complicate and enhance our analysis. When these indicators were put into a principal components analysis we found that there were 3 reasonably strong dimensions to this set of variables as well as some remaining variance that is best thought of as unique to the individual observed variables. This is a highly complex dimensional structure for such a small set of variables, but, apart from the influence of the questions themselves, it does mean that respondents were likely providing responses in a thoughtful and mindful fashion. They did not see these items as a list to be consistently responded to in one routinized way. While this is interesting and useful to know, it also means that we will not be able to summarize this set of variables as a single created variable in pursuing our bivariate and multivariate analyses.

In fact, there is sufficient unique variation in this system of variables that we might as well analyse each of the variables as a separate dependent variable. The alternative might be to use the three dimensions as variables.

Before proceeding to bivariate analysis of the variables, it is worth noting that the three dimensions identified in this system of variables can be well interpreted in terms of their main loadings on the 6 observed variables. The strongest component draws mostly on the more abstract indicators of community welfare including the question relating to general welfare and environmental quality. The second dimension relied mostly on the influence of views on unemployment and infrastructure deficit. Here, were are dealing with less abstract dimensions of impact but ones which still have technical meanings. The third factor relies almost entirely on the influence of the question on price effects in the construction sector which of course is a much more specific kind of topic than some of the others.

Some Bivariate Relations with the Indicators

We will look at the same variables used earlier in the paper as primary independent drivers of the 6 indicators of general impact. We will look at each of the 6 dependent indicators in relation to a particular driver and then repeat that process for the next potential driver. We will begin with province/territory of location as our first independent driver.

In the case of province/territory of location, we ran contingency tables showing the relation of province/territory to each of the 6 indicators. As per our established practice, we will sift through these findings using conventional descriptive and inferential statistics even though we are using the inferential statistics on an as if basis assuming this was a conventional probability sample. In fact, it is almost certainly more precise than a conventional probability sample of the same size either because of the finite population or because of the attempted census nature of the design, depending on one's point of view.

We found that all but one of the 6 indicators was significantly influenced by province/territory. The only one which was not significantly influenced was the one relating to general welfare of the community. In addition, basic measures of association confirmed that in 5 instances there was a moderate degree of relationship between province/territory and the indicator variables. The tables displaying the relationship between province/ territory and indicators potentially contain 39 cells. So, there are many small and zero cells in terms of how many cases fall into a cell. In a conventional sample, we might be concerned with the implications of this for significance tests, but it is unlikely to be of major importance here given the extent of population coverage and the nature of the research design.

In terms of the substantive meaning of these geographical effects, we note some salient findings below. Provinces that are not mentioned in a particular summary are those that are

close to average percentages of response on items of interest. Obviously, some of percentages are influenced by the small numbers of cases in some jurisdictions, particularly the territories.

- New Brunswick (83.3%), Northwest Territory (62.5%) and Yukon Territory (50.0 %) were particularly likely to say that the projects decreased unemployment. Alberta (18.8%), Manitoba (29.2%), Quebec (26.0%) and Saskatchewan (0 %) were less likely to say that the projects decreased unemployment.
- New Brunswick (83.3%), Nova Scotia (83.3%), Northwest Territory (85.7%) and Yukon Territory (100%) were particularly like to say that projects created an increase in earned income. Alberta (51.1%), Manitoba (52.2%), Nunavut (0.0%) and Quebec (44.1%) were less likely to say that projects increased earned income.
- Alberta (79.6%), New Brunswick (83.3%), Northwest Territories (85.7%) and Quebec (85.9%) were more likely to say that projects improved environmental quality. Newfoundland (40.0%), Nova Scotia (42.9%), Nunavut (0.0%). PEI (20.0 %), Saskatchewan (40.0%) and Yukon Territory (50.0%) were less likely to say that projects improved environmental quality.
- Nova Scotia (50.0%), Saskatchewan (50.0%) and the Yukon Territories (50.0%) are more likely to say that projects will increase prices in construction and related sectors. Alberta (8.9%), BC (21.5%), New Brunswick (20.0%), Newfoundland (20.0%). Northwest Territory (12.5%), Nunavut (0.0%) and PEI (20.0%) are less likely to say that such prices will increase.
- Alberta (80.4%), Manitoba (76.9%), New Brunswick (83.3%), Nova Scotia (71.4%), and Nunavut (100.0%) are more likely to say that projects will decrease their infrastructure deficit. Newfoundland (40.0%), Quebec (41.1%) and Yukon Territory (50.0%) are less likely to say that projects will decrease the deficit.

There are many themes in these results that could be explored further. Some of the results are probably influenced by differences in regional labour markets and the types of projects undertaken in different jurisdictions. Yet, there are other intriguing patterns such as the conjunction of Alberta and Quebec in not rating the income and unemployment effects very highly while, at the same time, both seeing improvement in environmental quality due to ISF.

Next we will look at the influence of the distribution of numbers of each type of project per recipient organization in relations to indicator variables. We will use correlations to examine this. In accordance with past use of these variables, very few conventionally significant relations were found. In fact out of 84 possible unique correlations existing within these variables, only 4 achieved conventional significance, and the actual size of the correlations was not great. The 4 minimally important correlations were:

- There is a correlation of negative -.120 between the number of community service/centre projects and the view that projects impacted earned income. Taking the coding of variables into account, this means that as the numbers of this type of project increased, there was an

increase in the view that earned income increased or remained the same as a result of projects. Illustrative significance was .003.

- There was a positive correlation of .132 between the number of community service/centre projects and views on the impact on environmental quality. Taking coding into account, this means that as the number of this type of project increased the belief that environmental quality decreased or remained the same became more frequent. Illustrative significance was .001
- There was a positive .092 correlation between the number of solid waste management projects and views on general community welfare. This means that as the number of this type of project increased, it became more likely that respondents would say that community welfare had decreased or remained unchanged. Illustrative significance was .022.
- There was a negative .097 correlation between the number of waste/waste water projects and views on the impact on infrastructure deficit. As numbers of this type of project increased it became more likely that respondents would say that deficits had remained the same or decreased.

These are certainly not strong relations.

The next driver we consider is the overall number of projects in a recipient organization. The correlations between this variable and the six indicators are quite weak, but we will use it in some of our later analysis for consistency. The only relationship here that was of any note had a marginal illustrative significance, and it is the relation between the number of projects and views on the impact of ISF on construction prices. The correlation was negative .071, and the reported significance level was .079. Thus, as the number of projects per organizations increases there is a slight tendency for respondents to think that construction prices have remained the same or increased.

Turning to the influence of the total value of ISF projects on our indicators, we found a few marginal or conventionally significant but weak relations. These are displayed in Table 6.

Table 6: Correlations between General Incremental Impact Measures of ISF and Total Funding of all ISF Projects in a Given Recipient Organization

IMPACT INDICATOR VARIABLES		TOTAL FUNDING (ALL PROJECTS IN A GIVEN RECIPIENT ORGANIZATION)
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the general welfare of your community	Pearson	.025
	Sig. (2-tailed)	.525
	N	628
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: unemployment levels in the community	Pearson	.079*
	Sig. (2-tailed)	.049
	N	622
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: earned income in the community	Pearson	-.088*
	Sig. (2-tailed)	.029
	N	620
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the environmental quality of the community.	Pearson	.022
	Sig. (2-tailed)	.579
	N	620
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: prices in the construction sector and related sectors	Pearson	-.072
	Sig. (2-tailed)	.076
	N	614
3. Compared to what would have been the case in the absence of ISF funding, what impact has ISF funding had in each of the areas: the infrastructure deficit of your municipality/organization	Pearson	.091*
	Sig. (2-tailed)	.024
	N	615

Four of the six relationships do achieve significance or near significance. The correlations themselves are of relatively small magnitude. The substance of the results is that:

- As the overall value of projects increase there is a slight tendency to perceive that unemployment has remained the same or gone down due to ISF projects.
- As the overall value of projects increase there is a slight tendency to perceive that earned income has remained the same or increased due to ISF projects.
- As the overall value of projects increases there is a slight (near significant) tendency to perceive that construction prices have remained the same or increased due to ISF projects.

- As the overall value of projects increase there is a slight tendency to perceive that infrastructure deficits have remained the same or decreased. This is the strongest relationship in this set.

Next we have the results for relationships between average percentage of community projects complete and the impact indicator variables. There is only one noteworthy relationship in this set. As the average percentage of a community's projects complete increase there is a tendency to perceive that the general welfare of the community has remained the same or decreased due to ISF projects. Although the correlation is only .153, this is relatively large in the overall context of other correlational results. The illustrative significance is .002.

Multiple Regressions

Again we tried various iterations and methods of multiple regression. Ultimately, we settled on independent variables based on provincial/territorial location of recipients, numbers of each type of project in a recipient community and a variable representing the total value of all ISF projects in a recipient community. Other variables discussed in bivariate analysis were not used in final regressions either because of missing data based on non-response/non-recording, problems in pursuing a variable consistently across analysis or general weakness of effect.

When we put our final set of independent or driver variables into ordinary least squares regressions for each of our 6 indicator variables, we find relatively weak prediction. Again, there were some significant effects, but overall R-Squares were in the 5 to 10 percent range, and, of course adjusted R Squares would be lower. Once again, it does not seem as though this extension to multiple regression has improved our understanding much beyond what was seen in more basic analysis.

One could argue that this sort of trichotomous dependent variable should be examined in the context of multinomial logistic regression as the variables are relatively categoric and course grained. So, this was tried as well. It is true that the pseudo R-Squares from the logistic regressions tended to be slightly higher than the R Squares in the ordinary least squares regressions, but only slightly. Furthermore, the prosaic but useful classification tables for the logistic regressions tended to show good overall classification but really depending on successful classification at one level of the variable.

It was decided that the results were not sufficiently clear or strong to be much of a guide for policy related concerns. However, it is worth noting that the provincial effects were not great in either of the approaches tried and were particular lacking in the logistic regressions. One of the few exceptions to this in the logistic regression was in the model focused on changes

in prices in the construction sector. Here, there were slightly more marked provincial effects. This simply supports the view that some of indicator variables are likely influenced by local labour market conditions.

Concluding Comment on Perceived Impact Variables

The most basic results show that ISF was generally perceived as having good effects on a number of dimensions. However, there was a degree of complexity in responses. For example, while many respondents did think the ISF projects had improved the unemployment and earned income situations in their communities, but many were neutral or thought otherwise on these points. Other variables did have some simple impacts on these perceived impact variables. For example:

- Looking at geographic effects, New Brunswick and some of the Northern Territories were more likely to have positive views of ISF impacts on unemployment and earned income. Alternatively Alberta, Manitoba and Quebec were less likely to have positive views of these impacts.
- Alberta and Quebec, among others, were more likely to say that IFS had beneficially impacted environmental quality while much of Atlantic Canada (excluding New Brunswick), the territories and part of the Prairies were less likely to say that.
- Small to medium sized provinces and territories had extreme perceptions of constructions prices changes due to IFS while larger provinces , excepting Alberta, tended to have more moderate views on this.
- Alberta was more likely to perceive ISF decreasing their infrastructure deficit while Quebec was opposite this. A variety of smaller provinces joined them at the extremes.

Apart from geographic variables, it is also the case that some of the other background variables used had modest impacts:

- Oddly enough the numbers of different types of infrastructure projects in a community did not have much influence on perceptions of impacts. However, the number of community centre/service did have some influences on perceptions. Increases in this variable tended to lead an increase in the apparent benefit of ISF on earned income and the opposite effect on environmental impacts.
- Increases in solid waste management projects also seemed to have some influence in producing a perception of ISF as having non-beneficial impacts in the case of general community welfare and beneficial ones in the case of infrastructure deficit.
- The number of projects overall in a community had only one minor impact.
- Total value of all projects in a community had some generally beneficial influences on impacts of perceptions unemployment, income and infrastructure deficits and a non-beneficial impact on construction prices. However, all of the correlations were relatively small in size.

- The average percentage of project completion in a community only had a statistically positive influence on the perceptions of overall community welfare, and this translates into a non-beneficial or neutral impact conceptually.

As we have seen not much useful was added to this by various regressions. The regressions made use of province/territory variables, numbers of different types of projects as well as overall value of projects in a community.

In summary, it would appear as though IFS impacts are generally positively perceived, but there are jurisdictional variations in those perceptions as well as a few minor variations due to other variables. As of this time, we do not have models that combine these variables in a way that provides powerful prediction, but the simple patterns do provide useful information. It is of some interest that large provinces such as BC and Ontario play so little role in defining extreme variations and that there is so little differentiation of response by the numbers of different types of projects in a community. In the case of BC and Ontario, it may be that they are so large a component of the programme and the country that they internally average out many variations. Yet, one wonders why the same is not true to the same extent of Albert and Quebec.

V. Perceptions of Systematic Technical Biases in the Approval of Projects

Basic Information on Individual Questions

There are various questions in the survey that probe the effect of ISF rules and procedures. While we cannot analyse them all in a single report, there are some that are likely to prove to be particularly pertinent and topical. For example, there has been some debate about biases in the approval and selection of ISF projects. While we do not wish to address the partisan political aspect of this, it may be the case that there are perceived procedural and technical biases in project approval. The following questions were used in the survey to get at this possibility:

13. Do you think that there were types of infrastructure projects that were systematically disadvantaged by the rules and selection process associated with ISF? Here, we are thinking of systematic patterns in objective characteristics of infrastructure (e.g. the type or function of infrastructure). We are not referring to more subjective political considerations.

A. **No** systematically-disadvantaged types of projects ☐ GO TO QUESTION 15
B. **Some** types of systematically-disadvantaged projects ☐ GO TO QUESTION 14

14. If you selected **B**, please describe the types of projects that might have been systematically disadvantaged in the ISF selection and approval process.

In response to question 13, the relevant findings are in the table below:

Table 7: Basic Results for Question 13 Phrased as "Do you think that there were types of infrastructure projects that were systematically disadvantaged by the rules and selection process associated with ISF?"

	Response Categories	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No systematically-disadvantaged types of projects	428	66.4	70.9	70.9
	Some types of systematically-disadvantaged projects	176	27.2	29.1	100.0
	Total	603	93.6	100.0	
Missing	NO RESPONSE	41	6.4		
Total		644	100.0		

More than half of the valid responses indicated that there was no perceived bias in project selection and approval. Still, 29.1 percent of valid responses indicated there was some kind of problem. This last percentage is a slight over statement of concerns in that a few of the people giving these responses were not able to provide details on what they meant.

Question 14 does allow respondents to give a description of the types of projects which they perceived as being affected by bias. Although a respondent could provide up to ten coded open ended responses, most of those giving a response did not go beyond one illustration of their interpretation of bias. In any event, a multiple response variable was created from the various potential responses, and the results for are in the next table.

Focusing on the percentage of responses, we see that it was common for respondents to name substantive types of projects that were disadvantaged as well as types of projects that had special planning and time frame implications. Note that 14.5 percent of responses pointed to roads/pavement/bridges projects as being disadvantaged. 15.7 percent of responses pointed to water system/wastewater treatment/sewers projects as being disadvantaged. 20.1 percent of responses pointed to projects that needed more lead time or other kinds of approval as being disadvantaged.11.7 percent of responses pointed to large scale/long term projects as being disadvantaged.

Table 8: Multiple Response Frequencies for Question 14 Series Based on the Phrasing "Please describe the types of projects that might have been systematically disadvantaged in the ISF selection and approval process."

Response Categories for Types of Disadvantaged Projects		Responses		Percent of Cases
		N	Percent	
	Roads/pavements/bridges	32	14.5%	19.8%
	Buildings (community/fire halls,	10	4.6%	6.2%
	Parks/recreational	12	5.2%	7.1%
	Water system/wastewater	35	15.7%	21.5%
	High priority projects (not able to	20	8.9%	12.2%
	Projects that require more lead	45	20.1%	27.5%
	Large scale projects/long-term	26	11.7%	16.1%
	Projects that have environmental	12	5.5%	7.5%
	Repair/reno/replacement projects for	15	6.6%	9.0%
	Other	16	7.2%	9.9%
Total		223	100.0%	136.8%

Some Bivariate Relations of Interest

Now we will see if the responses to question 13 appear to be related to some of the basic background and driver variables we have been emphasizing. We will begin with the impact of province/territory on perceptions of project bias.

Table 9: Question 13 Phrased as "Do you think that there were types of infrastructure projects that were systematically disadvantaged by the rules and selection process associated with ISF?" by Province/Territory in Which Recipient Organization is Located

			PROVINCE IN WHICH A GIVEN RECIPIENT ORGANIZATION IS LOCATED												Total
			AB	BC	MB	NB	NF	NS	NT	NV	ON	PE	QC	SK	YT	
13. Do you think that there were types of infrastructure projects that were systematically disadvantaged by the rules and selection process associated with	No systematically-disadvantaged types of projects	Count	33	59	18	2	3	5	6	1	163	3	131	2	1	427
		% within 13. Do you	7.7%	13.8%	4.2%	.5%	.7%	1.2%	1.4%	.2%	38.2%	.7%	30.7%	.5%	.2%	100.0
		% within	73.3%	74.7%	72.0%	40.0%	60.0%	83.3%	100.0	100.0	70.9%	75.0%	68.9%	40.0%	100.0	70.9%
		% of Total	5.5%	9.8%	3.0%	.3%	.5%	.8%	1.0%	.2%	27.1%	.5%	21.8%	.3%	.2%	70.9%
	Some types of systematically-disadvantaged projects	Count	12	20	7	3	2	1	0	0	67	1	59	3	0	175
		% within 13. Do you	6.9%	11.4%	4.0%	1.7%	1.1%	.6%	.0%	.0%	38.3%	.6%	33.7%	1.7%	.0%	100.0
		% within	26.7%	25.3%	28.0%	60.0%	40.0%	16.7%	.0%	.0%	29.1%	25.0%	31.1%	60.0%	.0%	29.1%
		% of Total	2.0%	3.3%	1.2%	.5%	.3%	.2%	.0%	.0%	11.1%	.2%	9.8%	.5%	.0%	29.1%
Total		Count	45	79	25	5	5	6	6	1	230	4	190	5	1	602
		% within 13. Do you	7.5%	13.1%	4.2%	.8%	.8%	1.0%	1.0%	.2%	38.2%	.7%	31.6%	.8%	.2%	100.0
		% within	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		% of Total	7.5%	13.1%	4.2%	.8%	.8%	1.0%	1.0%	.2%	38.2%	.7%	31.6%	.8%	.2%	100.0

The relationship between province and perceived bias is nowhere near conventional significance (chi square significance level = .640). Furthermore, measures of association values between the two variables are not very high. For example, Cramer's V is .127. Clearly, there is no indication that different provinces or territories consistently differ in major ways in their perceptions of bias. However, it is worth noting that New Brunswick, Newfoundland and Saskatchewan respondents are more markedly prone to indicate that some sort of bias in project approval and selection is at work.

In the case of project type, we examined the correlations between all the variables reflecting the number of projects of each type in a community and perceptions of bias. This was explored with both Pearson correlations and non-parametric correlations. There was little of note here. There was one Pearson correlation of .106 that was significant at the .01 level. This had to do with the number of highway and regional transit projects in a community. Thus, there is a slight tendency for perceptions of bias to increase as the number of highway and regional and transit projects in a community increases.

The relation between the overall number of projects in a community and perceptions of bias was also analysed. The Pearson correlation was .071 and was near significant, and the comparable non-parametric correlation was very slightly stronger and conventionally significant. So, this is a small tendency for perceptions of bias to increase as the number of projects in a community increases.

Next we turned to the influence of average completion percentage of projects in a community. There was virtually no relationship here. Finally, we examined the influence of total value of all projects in a community on perceptions of bias. The correlation (either parametric or non-parametric) was significant but small. In both modes of estimation it was about .106. So, there is a slight tendency for perception of bias to increase as the value of all projects in a community increases,

Multiple Regression

In light of the results of the bivariate analysis, we would not expect to finds much explanatory in regression analysis. However, we did use our standard template of provincial/territorial location, project type and overall projects value variables as predictors in two types of regressions, and both regressions were quite weak. One regression was based on ordinary least squares methods, and the other was more appropriately based on binomial logistic methods. Neither regression worked very well. There were some minor significant effects in the OLS regression, but they did not produce much overall explanatory power viewed in terms of R –Squares.

Concluding Comment on Perceptions of Systematic Technical Bias

Quite simply, there is a substantial minority of respondents who thought there was some degree of bias in projection selection and approval. They may have viewed this either in terms of the types of assets dealt with in a project or in terms of time frames and planning for different types of projects. However, there was very little influence on these responses by the types of background variables we have used. To the extent that there were any sorts of relationships, it seemed that communities with more projects rather than less were more likely to perceive bias.

VI. Details of the Impact of Specific Projects Chosen for More Focused Analysis

Basic Information on Individual Questions

In this part of the report we will turn to the part of the data that pertains to a specific project in a recipient community. Here, the questions turned from general indicators to a focus on a specific project. We will not consider each item in this section of the instrument, but will focus on a few key questions. The items of main interest are:

24. During the period of ISF funding, how many person years of employment, not including in the organization you represent, were/will be supported directly by expenditures on this project that would not have been provided in its absence? A good estimate is adequate.

Number of person years of employment: ☐

25. What is the average annualized gross pay for one of these positions?

Average annualized gross pay: ☐

26. What percentage of this project relates to purely public infrastructure as opposed to infrastructure that might predominantly benefit a particular private (profit or non-profit) organization?

Percentage: ☐

27. With specific respect to this project, how many months was it advanced in implementation (if at all) as a result of ISF funding? Just put zero if there was no impact on timing.

Number of months advanced ☐

Summary information on responses to these items are provided below. Note that these questions were weighted to reflect the population of projects rather than the population of recipient organizations. Also, note that we have eliminated three cases where it appears as though the respondent may have misunderstood the magnitudes referred to in the questions. One other case was left in even though it had some marginally questionable responses. The reader will also note that some of the questions have a bit fewer cases responding than some other items we have looked at. Apparently, there were some respondents who did not feel comfortable providing estimates of this kind.

Table 10: Basic Summary of Responses to Questions 24, 25, 26 and 27 Pertaining to a Specific Project in Each Organization					
	N	Minimum	Maximum	Mean	Std. Deviation
24. During the period of ISF funding, how many person years of employment, not including in the organization you represent, were/will be supported directly by expenditures on this project that would not have been provided in its absence?	527	0	600	19.26	55.120
25. What is the average annualized gross pay for one of these positions?	400	0	500000	55283.95	28553.508
26. What percentage of this project relates to purely public infrastructure as opposed to infrastructure that might predominantly benefit a particular private (profit or non-profit) organization?	583	0	100	92.90	24.627
27. With specific respect to this project, how many months was it advanced in implementation (if at all) as a result of ISF funding? Just put zero if there was no impact on timing.	419	0	120	22.33	17.763
Valid N (listwise)	355				

Typically, these projects created about 19 person years of work, paid salaries of about 55 thousand dollars per year, tended to be more than 90 percent devoted to purely public infrastructure and advanced implementation of projects due to ISF by about 22 months.

Bivariate Patterns

How do the indicators just described relate to some basic drivers we have been considering in this report. Looking first at the impact of province/territory we find the results presented in the next table. [5]

There are major differences across jurisdictions on these project specific variables. They are all highly conventional significant in their differences across jurisdictions, particularly question 24. In question 24, Alberta, New Brunswick and Quebec tend to use many more person years per project than other provinces. On question 25, British Columbia, Northwest territory and Yukon tend to pay much more per job than others while Nova Scotia and PEI pay much less. On question 26, Nova Scotia, Quebec and especially the Northwest Territory tend to be lower than other jurisdictions in the percentage of a project devoted to purely public infra structure. Finally, with question 27, New Brunswick, Nunavut, Alberta and Ontario tend to advance projects more in time due to ISF compared to other jurisdictions.

[5] Note that some cells in the table will indicate zero cases but provide some valid numbers. This is due to the rounding involved in the creation of weights. Any cell with numbers in it actually has at least one valid case.

Table 11: Mean Variation in Project Specific Activity as Represented Through Questions 24, 25, 26 and 27 within Geographic Location Categories

Location and Statistics		24. incremental person years of employment,	25. average annualized gross pay	26. Purely public percentage of this project	27. months project expedited
AB	Mean	113.46	57485.05	95.96	25.31
	N	28	27	30	29
BC	Mean	13.38	65343.03	96.24	18.43
	N	74	71	78	75
MB	Mean	7.76	50497.72	88.88	15.34
	N	5	9	10	10
NB	Mean	46.47	47669.39	87.06	35.55
	N	5	4	5	3
NF	Mean	16.29	53925.31	95.40	10.10
	N	6	6	6	6
NS	Mean	17.41	37841.23	80.33	15.62
	N	23	23	23	23
NT	Mean	2.72	73357.56	45.86	18.81
	N	4	4	4	4
NV	Mean	20.00		95.00	30.00
	N	0		0	0
ON	Mean	9.21	52620.72	94.87	26.47
	N	327	206	346	203
PE	Mean	6.49	33357.17	85.28	2.69
	N	1	1	4	4
QC	Mean	54.35	58516.72	80.37	18.38
	N	39	35	50	49
SK	Mean	1.48	59132.78	100.00	17.19
	N	11	11	24	12
YT	MEAN	9.26	73405.26	89.37	10.72
	N	3	3	3	3

Next we consider the distribution of these project specific indicators across the different types categories of projects that exist according to the type of infrastructure asset involved. This is presented in the next table. These are all extremely significant having significance levels much less

than .05. The types of projects have a significant impact on the kinds of inputs and outputs of the projects. Were one to consider a generalized indicator of variance explained such as Eta Squared, we would also see that the explanatory relationship is quite strong in two instances. Question 24 pertaining to person years of work created has an Eta Squared of .498 indicating that the project type categorization accounts for almost half of the variation in this indicator. Question 26 pertaining to the extent of purely public infrastructure involved has an Eta Squared of .235. In some respects, we are not surprised that the type of project influences its labour intensiveness, labour costs, public focus and timing. Nevertheless, the relationships, though expected, are not necessarily expected to be this strong, particularly in using survey data.

Let us briefly list the substantive interpretation of these impacts. In the case of question 24 concerning the incremental influence of IFS on person years of employment we find that:

- Public transit projects produce much higher person years of employment than other projects.
- Cultural projects are a very distant second.
- Solid waste management projects have the least impact on this indicator.

In the case of question 25 pertaining to average gross annual salaries for positions created, we find that:

- Airport, highway and regional transit and port/cruiseship related projects produce the highest annual salaries, all being over 60 thousand dollars.
- Solid waste management projects produce the lowest salaries, being around 35 thousand dollars

In the case of question 26 pertaining to the percentage of a project that was purely related to public infrastructure, we find that:

- Affordable housing, community centre/services are low on this indicator, being under 50 percent. Of course, in some instances we are dealing with a small number of projects.
- Cultural and port/cruiseship type projects tend to be intermediate with values in the 50 to 80 percent range
- Other types of projects are over 80 percent on this indicator and often close to 100 percent.

Table 12:: Mean Variation in Project Specific Activity as Represented Through Questions 24, 25, 26 and 27 within Project Type Categories

Type of Infrastructure and Statistics Labels		Q.24 person years employment created	Q.25 average annual gross pay per position	Q.26 percentage of purely public infrastructure	q.27 months that project was advanced by IFS
Affordable Housing	Mean	14.14	49285.71	25.00	16.75
	N	1	1	1	1
Airport	Mean	21.50	68125.00	83.00	40.00
	N	2	2	2	2
Brownfield	Mean	7.33	46666.67	100.00	14.00
	N	1	1	1	1
Community	Mean	23.95	45307.69	32.67	19.28
	N	9	8	11	12
Cultural	Mean	41.95	46164.86	55.88	22.80
	N	14	13	18	18
Disaster Mitigation	Mean	6.00	50000.00	100.00	36.00
	N	1	1	1	1
Highway	Mean	22.67	61538.30	99.01	12.91
	N	42	43	46	44
Local Roads	Mean	9.95	62499.63	99.01	24.61
	N	156	152	175	136
Municipal Buildings	Mean	11.71	46892.96	94.53	20.22
	N	47	43	51	51
Parks and Trails	Mean	10.87	45136.30	93.66	27.12
	N	48	47	50	49
Port and Cruiseship	Mean	18.60	65000.00	76.85	7.17
	N	7	7	7	7
Public Transit	Mean	300.00	50000.00	100.00	36.00
	N	10	10	10	10
Solid Waste Management	Mean	5.30	35000.00	100.00	16.62
	N	3	3	4	4
Waste and Wastewater	Mean	14.22	50994.12	92.85	21.87
	N	187	70	206	84

Turning to question 27 having to do with the number of months a project was expedited due to ISF, we find that:

- Airport, Disaster Mitigation and Public Transport all tended to advance a projects timing by more than 30 months.

- Cultural, local roads and municipal buildings, parks/trails projects, waste/wastewater projects tend to be intermediate in the extent to which they were advanced in implementation. They all tend to be in the 20 to 30 month range.
- All other types of projects are associated with incremental expediting factors of less than 20 months, and port/cruiseship tend to be particularly low in this regard.

There are several other independent or driver variables that we have used in the previous parts of this report, and they may prove to be of value here. So, a few words on these variables will be useful. Correlations between the project specific indicators and overall funding of a recipient organization, number of projects in a recipient organization, average percentage of projects completed in a recipient organization were generated. While it is true that a few of these relations turned out to be conventionally significant, none of them exceeded .2 in absolute value. For that and other reasons presented elsewhere, it does not seem worthwhile to pursue most of those relations further in detail. The overall value of projects is one of these variables that we will continue to use as a useful background driver. Note that the drivers just noted are derived from the administrative data base and linked to the project specific survey data

Parallel to this, we also generated the correlations between the project specific indicators and some other project specific characteristics. These are from survey data. Specifically, we looked at relations between the indicators and average percent of the specific project complete and total funding of the specific project. The only potentially interesting finding here was that there was a highly significant correlation of -.243 between the percentage of a specific project completed and the average annual gross income per job generated by a project. In other words, there was a tendency for salaries to go down as the percentage of a project completed went up. This is a bit odd, but some methodological and substantive explanations are available to suggest why this is the case. However, as has been the case with past uses of similar variables, the correlation is based on a subset (n= 339) of the overall data because of missing value issues. For this reason, we will not use this project specific completion rate in the next segment of analysis.

Multiple Regressions

In light of the results of the bivariate analyses conducted and the missing data issues involved with some variables, it appeared to be worthwhile to conduct some multiple regressions in which project level output indicators were explained in terms of province/territory of location, type of project in terms of infrastructure type and perhaps one variable such as the overall budget for the project. The provinces are represented as dummy variables using the territories as an excluded contrast group. The project types are also represented as dummies using affordable housing projects as the excluded contrast group. This follows patterns applied to some previous sets of indicator variables but which did not yield anything particularly informative

Interestingly enough, these regressions did yield some fairly substantial and, possibly, useful results. This is particularly true when one keeps in mind that the regressions are based on micro data. To keep things in perspective, it is also useful to realize that this is but a first schematic pass

through the data, and models and techniques could be refined to a great degree in more specialized work guided by other kinds of modeling principles.

The first regression had as its dependent variable question 24 relating to person years of employment created by a project. Overall explanatory power of the regression was quite substantial and significant as indicated in the following table:

Table 13: Regression with dependent variable Q. 24. "During the period of ISF funding, how many person years of employment, not including in the organization you represent, were/will be supported directly by expenditures on this project that would not have been provided in its absence?"

R Square	Adjusted R Square	Significance
.548	.527	.000
N=526		

In effect, the independent variables account for more than half the variation in the dependent variable. This is an extraordinarily strong result for micro data analysis unless the independent variables have some trivial or definitional reason to have such a strong relation with the dependent variable. The effects of the individual independent variables are portrayed in the next table:

Table 14: Regression Using Q. 24 (During the period of ISF funding, how many person years of employment, not including in the organization you represent, were/will be supported directly by expenditures on this project that would not have been provided in its absence?" as Dependent variable

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.795	37.619		.154	.878
ALBERTA RECIPIENT ORGANIZATION	17.151	17.103	.070	1.003	.316
BC RECIPIENT ORGANIZATION	10.505	15.076	.066	.697	.486
MANITOBA RECIPIENT ORGANIZATION	5.890	22.412	.011	.263	.793
NEW BRUNSWICK RECIPIENT ORGANIZATION	43.119	22.724	.073	1.897	.058
NEWFOUNDLAND RECIPIENT ORGANIZATION	10.383	21.440	.019	.484	.628
NOVA SCOTIA RECIPIENT ORGANIZATION	12.342	16.507	.046	.748	.455
ONTARIO RECIPIENT ORGANIZATION	7.229	15.127	.064	.478	.633
PEI RECIPIENT ORGANIZATION	-4.389	43.049	-.003	-.102	.919
QUEBEC RECIPIENT ORGANIZATION	62.583	16.501	.298	3.793	.000
SASKATCHEWAN RECIPIENT ORGANIZATION	2.951	18.750	.008	.157	.875
airport dummy variable for specifc section 3 project	8.371	44.910	.009	.186	.852
brownfield redevelopment dummy variable for	-5.923	57.186	-.004	-.104	.918
community centre and service dummy variable for	7.951	36.723	.019	.217	.829
cultural dummy variable for specific section 3	16.315	36.048	.048	.453	.651
disaster mitigation dummy variable for specific	-7.404	52.440	-.006	-.141	.888
highway and regional transit dummy variable for	3.295	35.493	.016	.093	.926
local roads dummy variable for specific section 3	-3.925	34.631	-.033	-.113	.910
municipal buildings dummy variable for specific	-2.666	34.946	-.014	-.076	.939
parks and trails dummy variable for specific section	-4.798	35.038	-.025	-.137	.891
ports and cruiseships dummy variable for specific	-9.395	37.827	-.019	-.248	.804
public transit dummy variable for specific section 3	268.324	38.408	.654	6.986	.000
solid waste management dummy variable for	-8.741	40.481	-.012	-.216	.829
water and wastewater dummy variable for specific	-17.512	35.048	-.152	-.500	.618
TOTAL PROJECT VALUE OF A GIVEN SECTION	2.910E-7	.000	.086	1.539	.124

We find that there are a small numbers of drivers that are primarily responsible for the large overall explanatory impact. Notable findings are:

- Project location in New Brunswick tends to push up the number of person years of employment created (near conventional significance).
- Project location in Quebec tends to push up the number of person years of employment created (conventionally significant)

- Public transit projects have a huge effect on person years of employment generated, and this is by far the biggest impact (conventionally significant).
- If we were to remove the majority of unimportant driver variables, it is likely that the overall project value variable would have a significant positive impact on employment created. This is not surprising, but it is slightly surprising that it does not have a larger relative impact compared to other important drivers.

Next, we will examine the same sort of regression but using the indicator relating to annual average gross salary for a job associated with a project. The overall results of this regression appear below:

Table 15: Regression with dependent variable q. 25. "What is the average annualized gross pay for one of these positions?"		
R Square	Adjusted R Square	Significance
.167	.113	.000
N=399		

Clearly, the explanatory power of this second regression is much less than the first. However, it is reasonable for a micro data based analysis.

The individual impacts of the drivers on this dependent variable are provided in Table 16.

Table 16: Regression using q.25 ("What is the average annualized gross pay for one of these positions?" as dependent variable

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	71674.755	26791.523		2.675	.008
ALBERTA RECIPIENT ORGANIZATION	-6676.413	12555.954	-.058	-.532	.595
BC RECIPIENT ORGANIZATION	-8498.855	10932.316	-.114	-.777	.437
MANITOBA RECIPIENT ORGANIZATION	-25088.772	13838.729	-.130	-1.813	.071
NEW BRUNSWICK RECIPIENT ORGANIZATION	-30174.054	16634.662	-.111	-1.814	.070
NEWFOUNDLAND RECIPIENT ORGANIZATION	-25949.865	15360.908	-.108	-1.689	.092
NOVA SCOTIA RECIPIENT ORGANIZATION	-40132.254	11906.998	-.327	-3.370	.001
ONTARIO RECIPIENT ORGANIZATION	-24333.845	10987.781	-.426	-2.215	.027
PEI RECIPIENT ORGANIZATION	-34378.005	30634.197	-.057	-1.122	.262
QUEBEC RECIPIENT ORGANIZATION	-5280.322	12135.730	-.052	-.435	.664
SASKATCHEWAN RECIPIENT ORGANIZATION	-19096.034	13484.015	-.111	-1.416	.158
airport dummy variable for specifc section 3 project	5116.457	31865.109	.012	.161	.873
brownfield redevelopment dummy variable for	-1078.909	40555.294	-.002	-.027	.979
community centre and service dummy variable for	-3650.211	26225.105	-.018	-.139	.889
cultural dummy variable for specific section 3	-8570.705	25628.168	-.053	-.334	.738
disaster mitigation dummy variable for specific	1998.980	37188.202	.003	.054	.957
highway and regional transit dummy variable for	10876.968	25210.178	.118	.431	.666
local roads dummy variable for specific section 3	11672.876	24568.784	.199	.475	.635
municipal buildings dummy variable for specific	-1666.069	24813.796	-.018	-.067	.947
parks and trails dummy variable for specific section	-12680.319	24865.905	-.143	-.510	.610
ports and cruiseships dummy variable for specific	-1012.909	26845.667	-.005	-.038	.970
public transit dummy variable for specific section 3	-30173.270	27952.626	-.163	-1.079	.281
solid waste management dummy variable for	-14770.599	29685.062	-.041	-.498	.619
water and wastewater dummy variable for specific	-9389.817	24973.749	-.125	-.376	.707
TOTAL PROJECT VALUE OF A GIVEN SECTION	.001	.000	.116	1.789	.074

We find that:

- Many province variables have near significant or significant negative impacts on the earnings variable. Specifically, Manitoba, New Brunswick, Newfoundland, Nova Scotia and Ontario
- By way of contrast, none of the project type dummy variables seeming to be important predictors.

- The overall value of the project does have a near significant positive impact on the earnings variable.

The limited influence of project type is interesting. To some extent the more pronounced influence of province variables is likely a reflection of local labour and earnings conditions. The negative signs of the impacts likely have most to do with the contrast group consisting of the territories. In those reference group jurisdictions we would expect pay levels to be fairly high because of various northern and remote premiums. Hence, pay in other jurisdictions will appear to be low.

The third dependent indicator has to do with the percentage of a project that was related to purely public infrastructure, and the overall results for that are next:

Table 17: Regression with dependent variable q. 26. "What is the average annualized gross pay for one of these positions?"

R Square	Adjusted R Square	Significance
.308.	.278	.000
N=582		

Again, quite a healthy amount of explanation is achieved for micro data, and it is conventionally significant. As well, there are relatively few missing data cases. The results for the individual driver or independent variables are presented in the next table.

That table shows a wide variety of significant and near significant effects, all of them positive. The positive signs just mean that various provincial and project category variables tend to push the percentage of purely public infrastructure higher than is the case in reference categories (territories in the cases of provinces and affordable housing in the case of project categories). So, it is most relevant to consider the relative size of coefficients. We will focus on the standardized coefficients, although information is also to be gained from looking at the unstandardized coefficients.

Table 18: Regression Using Q.26 (What percentage of this project relates to purely public infrastructure as opposed to infrastructure that might benefit a predominantly private (profit or non-profit) organization?) as Dependent Variable

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-7.309	19.535		-.374	.708
ALBERTA RECIPIENT ORGANIZATION	31.044	9.098	.281	3.412	.001
BC RECIPIENT ORGANIZATION	32.515	8.101	.449	4.014	.000
MANITOBA RECIPIENT ORGANIZATION	29.951	10.210	.159	2.934	.003
NEW BRUNSWICK RECIPIENT ORGANIZATION	20.650	12.419	.075	1.663	.097
NEWFOUNDLAND RECIPIENT ORGANIZATION	23.139	11.721	.092	1.974	.049
NOVA SCOTIA RECIPIENT ORGANIZATION	9.524	8.935	.076	1.066	.287
ONTARIO RECIPIENT ORGANIZATION	31.377	8.088	.626	3.880	.000
PEI RECIPIENT ORGANIZATION	26.890	13.731	.085	1.958	.051
QUEBEC RECIPIENT ORGANIZATION	25.482	8.727	.291	2.920	.004
SASKATCHEWAN RECIPIENT ORGANIZATION	34.469	9.115	.279	3.781	.000
airport dummy variable for specifc section 3 project	67.811	22.703	.173	2.987	.003
brownfield redevelopment dummy variable for specifc section 3	75.728	30.831	.106	2.456	.014
community centre and service dummy variable for specific section 3	8.030	18.871	.045	.425	.671
cultural dummy variable for specific section 3 project	33.081	18.539	.232	1.784	.075
disaster mitigation dummy variable for specific section 3 project	75.598	28.145	.122	2.686	.007
highway and regional transit dummy variable for specific section 3	83.809	18.326	.917	4.573	.000
local roads dummy variable for specific section 3 project	74.243	17.882	1.384	4.152	.000
municipal buildings dummy variable for specific section 3 project	71.616	18.050	.820	3.968	.000
parks and trails dummy variable for specific section 3 project	70.010	18.114	.795	3.865	.000
ports and cruiseships dummy variable for specific section 3 project	51.749	19.697	.228	2.627	.009
public transit dummy variable for specific section 3 project	68.578	19.989	.356	3.431	.001
solid waste management dummy variable for specific section 3	75.953	20.536	.261	3.699	.000
water and wastewater dummy variable for specific section 3 project	64.644	18.086	1.256	3.574	.000
TOTAL PROJECT VALUE OF A GIVEN SECTION 3 PROJECT IN	2.562E-7	.000	.163	2.609	.009

The effects of major note are described as follows:

- I terms of standardized effects, Ontario is much more likely than other provinces to have a high level of purely public focus for the projects examined. It is followed by strong effects in BC, Quebec, Alberta in that order. Then, we have Saskatchewan, Manitoba, Newfoundland and PEI with more modest but significant effects. Finally, Nova Scotia (not significant) and New Brunswick (near significant) are relatively weak effects on this dimension.

- With respect to project type effects, we find that local roads and waste/wastewater projects are very high in producing a percentage of public infrastructure, and this is not surprising. However, the standardized coefficients for these variables are actually out of range (above 1). This suggests (on a symptomatic basis) a collinearity problem of some kind, and should be examined in subsequent analysis. This would certainly mean a refinement in what is included in the regression.
- Highways, municipal buildings and parks/trails projects are also quite high in their effects here, but they are within a proper range of values. Again, there is nothing too surprising about these types of projects being particularly concentrated toward producing purely public infrastructure.
- Public transit, solid waste management projects and cultural projects are next in order of importance.
- Airport , disaster mitigation and brownfield development are weak but still significant.
- Finally, the only non-significant effect here is the one connected with community center/service projects. Again, this makes some sense in terms of the cooperative arrangements between public and non-public organizations in delivering services in some of these contexts.

Generally, there are a lot of effects connected with this dependent variable, and they do make sense but do not tell us anything particularly surprising. At the same time, further analysis in this area would have to sort out some of the apparent collinearity problems which emerged in the case of project type variables at a symptomatic level.

Moving on to the fourth variable having to do with the number of months projects were advanced in implementation due to ISF funding, we find the following overall summary of explanatory power.

Table 19: Regression with dependent variable q. 27. "With specific respect to this project, how many months was it advanced in implementation (if at all) as a result of ISF funding? Just put zero if there was no impact on timing."

R Square	Adjusted R Square	Significance
.150.	.099	.000
N=418		

This is a reasonable result for micro data. The missing data are a bit more of an issue here than in some other instance, but that is likely just a result of the fact that this question required some respondents to estimate and speculate a bit more than normal. The results for individual independent variables are shown below.

Table 20: Regression using q. 27 (With respect to this project, how many months was it advanced in implementation (if at all) as a result of ISF funding? Just put zero if there was no impact on timing.

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.165	15.754		.264	.792
ALBERTA RECIPIENT ORGANIZATION	2.382	7.435	.034	.320	.749
BC RECIPIENT ORGANIZATION	3.463	6.552	.075	.529	.597
MANITOBA RECIPIENT ORGANIZATION	2.249	8.235	.019	.273	.785
NEW BRUNSWICK RECIPIENT ORGANIZATION	17.179	12.475	.076	1.377	.169
NEWFOUNDLAND RECIPIENT ORGANIZATION	-2.589	9.460	-.017	-.274	.785
NOVA SCOTIA RECIPIENT ORGANIZATION	4.001	7.214	.051	.555	.579
ONTARIO RECIPIENT ORGANIZATION	11.533	6.535	.325	1.765	.078
PEI RECIPIENT ORGANIZATION	-11.669	11.072	-.060	-1.054	.293
QUEBEC RECIPIENT ORGANIZATION	.775	7.151	.014	.108	.914
SASKATCHEWAN RECIPIENT ORGANIZATION	1.003	8.171	.009	.123	.902
airport dummy variable for specifc section 3 project	29.512	18.298	.123	1.613	.108
brownfield redevelopment dummy variable for	-1.929	24.849	-.004	-.078	.938
community centre and service dummy variable for	3.572	15.163	.033	.236	.814
cultural dummy variable for specific section 3	11.404	14.940	.130	.763	.446
disaster mitigation dummy variable for specific	19.925	22.683	.053	.878	.380
highway and regional transit dummy variable for	4.219	14.789	.073	.285	.776
local roads dummy variable for specific section 3	11.023	14.432	.291	.764	.445
municipal buildings dummy variable for specific	5.875	14.548	.108	.404	.687
parks and trails dummy variable for specific section	15.616	14.606	.283	1.069	.286
ports and cruiseships dummy variable for specific	-2.257	15.883	-.016	-.142	.887
public transit dummy variable for specific section 3	20.774	16.468	.176	1.261	.208
solid waste management dummy variable for	2.207	16.558	.012	.133	.894
water and wastewater dummy variable for specific	13.428	14.656	.302	.916	.360
TOTAL PROJECT VALUE OF A GIVEN SECTION	2.893E-7	.000	.107	1.707	.089

While the previous regression discussed suffered from an embarrassment of significant drivers, this regression presents a contrast. Not one independent variable is conventionally significant, but several are near significant and would become clearly significant were unimportant variables removed from the regression. Based on that, the noteworthy, near significant findings are as follows:

- Ontario projects have much higher advances in implementation dates than average. This is the biggest effect.
- Airport related projects have somewhat higher advances in implementation dates than average.
- The total value of the project tends to have a positive impact on the amount of time the project is expedited.

It makes sense that communities and provinces would try to expedite expensive projects when new funding arises within a tight frame. However, it is not immediately clear why Ontario differs in its tendency to expedite projects. In order to make sure of the importance of the three driver variables in a simplified analysis, and we did indeed find that Ontario and total project value continued to have important (and now clearly significant effects. The airport project category did not achieve conventional significance but remained close to near significant.

Concluding Comment on Project Specific Variables

The indicators of interest in this section showed that projects did indeed create significant jobs at reasonable salaries, mostly in the realm of purely public infrastructure and in notably expedited fashion as a result of ISF. This is all very positive information with respect to the ISF programme. Perhaps some will say that the average number of jobs created per project was not huge, but it should be noted that this is an average around which there is considerable variation.

- Nevertheless, there is a fair amount of variation in indicators across jurisdictions and project types. This may reflect local labour market conditions to some extent, but other findings in this area do not seem so easily explained. In terms of bivariate analysis, one can review our previous detailed findings, but certain things are worth capsulizing in this area. Why are Alberta and New Brunswick relatively effective at creating person years of employment and expediting projects? Partly related to this why is Ontario so effective in expediting projects compared to their non-ISF time table. Also partly related to this, why does Quebec do relatively well in the number of person years of employment created?
- Public transit projects seem to be particularly good at creating person years of employment and are subject to large schedule expediting factors. It is not difficult to see why they might be labour intensive, but it is less clear what the large advancement of such projects in time means.
- Airport, highway /regional transit and port/cruiseship related projects produce the highest annual salaries, but are not particularly noteworthy in most other respects. Is this a result of their ratio of labour costs to material costs or other factors?
- Solid waste management projects were not particularly effective either at creating person years of employment or high pay levels. In light of that, it may be worthwhile to consider the details of such projects in future funding programmes. It may be that they can be enhanced or are best served under some other arrangement.

Our multiple regressions using jurisdiction, type of project and value of project produced some useful results. Occasionally, the reader may note that the regression results do not seem to produce conclusions that line up with simpler analysis. This is not uncommon as an effect of a variable in multiple regressions is a partial effect determined once other variables used as drivers have been taken into account. In many respects, this sort of analysis is just to give us a sense of how well can predict certain indicators given our data. In some cases, we found some truly powerful predictions, but there is still much work that could be done at this level. For example:

- The massive impact of Quebec location and public transit type projects on person year creation is perhaps not surprising, but it is important.
- The massive (relative to the territories) downward shift in pay per position in Nova Scotia and Ontario also deserves more attention. Since this occurs in a regression that also used total project value (which is close to significant), it might be the case that this is telling us that Ontario produces relatively low pay on these projects once the size of the project is controlled. Perhaps this is a superficially masked rural-urban difference. This of course reminds us that many of these jurisdictions are huge and highly variable. Simply being represented as part of a particular province or territory does not always tell us much.
- The Ontario and total project value impacts on amount of time a project was expedited may tell us something about the how projects are typically placed in a planning and implementation queue under certain circumstances. Have some jurisdictions a much longer list of tentatively planned projects but a lack of fiscal ability to proceed until more funds are forthcoming? Do expensive projects tend to be pushed to the back of the queue until special subsidies and programmes are available?

VII. Perceptions of Ways in Which the Selection, Design and Implementation of an ISF Type Programme Could be Improved

Basic Information on Individual Questions

Approaching the end of the questionnaire, there are a series of open ended questions asking respondents how ISF could be improved by the various levels of government involved in its administration. There is also a final question about ISF type programmes could be improved in the future in terms that are specifically relevant to its main mandate and the mandate of this study. These questions were set up to allow for multiple responses. However, as is typically the case, the number of responses dropped off dramatically after the first multiple response opportunity and became quite tiny after the second. While simple statistics can easily be used with full multiple response data, such data are less amenable to more advanced techniques. In order to pursue this part of the analysis with consistency and efficiency, we will concentrate our analysis on the primary responses.

The first question is:

28. If you think there are any **administrative procedures** (e.g. application process, approval process, reporting process) that could be improved in ISF-type projects, please describe them below in relation to the level(s) of government that would be connected with the change(s).

    Federal:

Table 21: Primary Responses to Question 28 Pertaining to Suggestions for Improvement in Administrative Processes at the Federal Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient approval	76	11.7	28.5	28.5
	Longer time frame given to submit application/ready	22	3.5	8.4	37.0
	Shorter time frame between approval and receipt of	12	1.9	4.7	41.6
	Expand eligibility for different types of projects	7	1.1	2.7	44.4
	Improve online application/process	8	1.2	2.9	47.3
	More information provided/better communication	28	4.3	10.5	57.8
	Reporting process/requirement too	45	7.0	17.1	74.9
	No suggestions/satisfied (all positive mentions)	16	2.4	5.9	80.8
	Assign single point of contact for all levels of	13	2.0	4.9	85.6
	Advanced funding to help planning/design process	7	1.1	2.6	88.2
	On-going funding for long-term	13	2.0	4.8	93.0
	More flexibility with start/end date of projects	9	1.4	3.4	96.4
	More flexibility to allocate funds	6	.9	2.3	98.7
	Other	4	.6	1.3	100.0
	Total	265	41.2	100.0	
Missing	NO RESPONSE	379	58.8		
Total		644	100.0		

41.2 percent of the sample provided at least some suggestions for improvements at the Federal level. The most common suggestions are not surprising. They mostly relate to the timing of the approval process and subsequent aspects of the administrative process. There were also suggestions about reducing reporting requirements and improving communication. It should be noted that a small number did not really give suggestions for improvement but simply restated satisfaction.

Provincial:

Only 30.7 percent of respondents had at least one suggestion regarding provincial procedures. As can be seen below, they were similar to those made concerning federal administrative procedures. Again, a few really just restated their satisfaction with ISF.

Provincial

Table 22: Primary Responses to Question 28 Pertaining to Suggestions for Improvement in Administrative Processes at the Provincial Level

Response Caegories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient approval	54	8.4	27.3	27.3
	Longer time frame given to submit application/ready	14	2.2	7.2	34.5
	Shorter time frame between approval and receipt of	14	2.2	7.1	41.5
	Expand eligibility for different types of projects	1	.1	.4	42.0
	Improve online application/process	3	.4	1.3	43.2
	More information provided/better communication	19	3.0	9.6	52.9
	Reporting process/requirement too	35	5.4	17.6	70.4
	No suggestions/satisfied (all positive mentions)	19	2.9	9.5	80.0
	Assign single point of contact for all levels of	13	2.1	6.7	86.7
	Advanced funding to help planning/design process	8	1.2	3.9	90.5
	On-going funding for long-term	4	.7	2.2	92.8
	More flexibility with start/end date of projects	3	.5	1.6	94.4
	More flexibility to allocate funds	6	1.0	3.1	97.5
	Other	5	.8	2.5	100.0
	Total	198	30.7	100.0	
Missing	NO RESPONSE	446	69.3		
Total		644	100.0		

Municipal:

Table 23: Primary Responses to Question 28 Pertaining to Suggestions for Improvement in Administrative Processes at the Municipal Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient approval	14	2.2	23.1	23.1
	Longer time frame given to submit application/ready	3	.5	5.6	28.6
	Expand eligibility for different types of projects	2	.3	3.2	31.8
	More information provided/better communication	7	1.2	12.3	44.1
	Reporting process/requirement too	11	1.6	17.4	61.5
	No suggestions/satisfied (all positive mentions)	6	1.0	10.3	71.8
	Assign single point of contact for all levels of	2	.4	4.0	75.8
	Advanced funding to help planning/design process	2	.3	2.8	78.6
	On-going funding for long-term	5	.8	8.7	87.2
	More flexibility with start/end date of projects	2	.2	2.5	89.7
	More flexibility to allocate funds	1	.1	1.4	91.1
	Other	5	.8	8.9	100.0
	Total	60	9.4	100.0	
Missing	NO RESPONSE	584	90.6		
Total		644	100.0		

Only 9.4 percent had suggestions relating to the municipal level. This makes sense in that municipalities were generally recipient organizations and did not have the same sort of effect on rules and procedures. What suggestions were made in this contest were broadly similar to those made respecting the higher levels of government. As was the case with similar questions, a few people simply reiterated satisfaction.

Now we turn to the basic results for planning procedures and suggestions relating to them

29. If you think there are any **planning procedures** that could be implemented to optimize the economic stimulus impact of ISF-type projects, please describe them below in relation to the level(s) of government that would be connected with the change(s).

Federal:

Table 24: Primary Responses to Question 29 Pertaining to Suggestions for Improvement in Planning Processes at the Federal Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	39	6.1	24.5	24.5
	More flexibility with start/end date of projects	19	2.9	11.8	36.2
	More flexibility to allocate funds	9	1.4	5.8	42.1
	Expand eligibility for different types of projects	14	2.2	9.0	51.1
	On-going funding for long-term	34	5.2	21.2	72.3
	More information provided/better communication	20	3.1	12.3	84.6
	Advanced funding to help planning/design process	7	1.0	4.1	88.7
	Other	18	2.8	11.3	100.0
	Total	160	24.8	100.0	
Missing	NO RESPONSE	485	75.2		
Total		644	100.0		

Only 24.8 percent of respondents offered at least one suggestion. Suggestions for the planning stage relating to Federal responsibility were similar to those volunteered in relation to preliminary administration. However, the idea of ongoing long-term funding emerges more strongly here.

Provincial:

Table 25: Primary Responses to Question 29 Pertaining to Suggestions for Improvement in Planning Processes at the Provincial Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	25	3.9	24.4	24.4
	More flexibility with start/end date of projects	11	1.8	11.2	35.6
	More flexibility to allocate funds	4	.7	4.2	39.8
	Expand eligibility for different types of projects	11	1.8	11.0	50.9
	On-going funding for long-term	22	3.4	21.5	72.4
	More information provided/better communication	16	2.5	15.6	88.0
	Advanced funding to help planning/design process	3	.5	3.0	91.0
	Other	9	1.4	9.0	100.0
	Total	103	16.0	100.0	
Missing	NO RESPONSE	541	84.0		

Provincial:

Table 25: Primary Responses to Question 29 Pertaining to Suggestions for Improvement in Planning Processes at the Provincial Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	25	3.9	24.4	24.4
	More flexibility with start/end date of projects	11	1.8	11.2	35.6
	More flexibility to allocate funds	4	.7	4.2	39.8
	Expand eligibility for different types of projects	11	1.8	11.0	50.9
	On-going funding for long-term	22	3.4	21.5	72.4
	More information provided/better communication	16	2.5	15.6	88.0
	Advanced funding to help planning/design process	3	.5	3.0	91.0
	Other	9	1.4	9.0	100.0
	Total	103	16.0	100.0	
Missing	NO RESPONSE	541	84.0		
Total		644	100.0		

16 percent provided some suggestions regarding provincial planning procedures. The responses bear a strong resemblance to other variables we have looked at in this section. Again, the idea on-going long term funding is of more importance in the context of planning.

Municipal:

Table 26: Primary Responses to Question 29 Pertaining to Suggestions for Improvement in Planning Processes at the Municipal Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	7	1.1	14.5	14.5
	More flexibility to allocate funds	4	.7	8.8	23.2
	Expand eligibility for different types of projects	9	1.4	17.6	40.8
	On-going funding for long-term	12	1.8	23.8	64.6
	More information provided/better communication	7	1.1	14.7	79.3
	Advanced funding to help planning/design process	6	.9	12.2	91.6
	Other	4	.7	8.4	100.0
	Total	50	7.7	100.0	
Missing	NO RESPONSE	595	92.3		
Total		644	100.0		

Only 7.7 percent had suggestions concerning municipal rules, and this is in line with the limited municipal control over some aspects of planning in ISF type projects. Long term funding

continues to be the focus of much of the data as it relates to planning. It is also notable that the idea of advancing funding for design and planning emerges a bit more strongly here.

Next we consider suggestions pertaining to the measurement of impact of ISF.

30. If you have any specific suggestions concerning **the way ISF-type project impacts are determined or measured**, please describe them below in relation to the level(s) of government that would be connected with the change(s).

Federal:

Table 27: Primary Responses to Question 30 Pertaining to Suggestions for Improvement in Determining and Measuring Impacts at the Federal Level

Response Categories		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	6	.9	7.6	7.6
	Difficult to measure the impact of project/better	21	3.3	27.6	35.3
	Difficult to measure the impact of project on job	16	2.4	20.3	55.6
	Difficult to determine in detail because we use	6	.9	7.8	63.4
	Impacts measured by increase in quality of life	1	.1	1.0	64.4
	Impacts measured by decrease in cost/deficit/other	15	2.3	19.0	83.4
	Other	13	2.0	16.6	100.0
	Total	78	12.0	100.0	
Missing	NO RESPONSE	567	88.0		
Total		644	100.0		

Only 12 percent offered suggestions relating to improved definition and measurement of impact. Mostly the comments acknowledged the difficulties in this area and the value of making some improvement in the way impacts are defined.

Provincial:

Table 28: Primary Responses to Question 30 Pertaining to Suggestions for Improvement in Determining and Measuring Impacts at the Provincial Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	4	.7	8.6	8.6
	Difficult to measure the impact of project/better	13	2.0	27.0	35.6
	Difficult to measure the impact of project on job	8	1.3	17.1	52.8
	Difficult to determine in detail because we use	4	.7	9.0	61.8
	Impacts measured by increase in quality of life	2	.4	5.1	66.9
	Impacts measured by decrease in cost/deficit/other	4	.6	8.5	75.4
	Other	12	1.9	24.6	100.0
	Total	49	7.6	100.0	
Missing	NO RESPONSE	596	92.4		
Total		644	100.0		

Only 7.6 percent made suggestions regarding provincial changes in dealing with the definition and measurement of impact. The themes of these responses were similar to the ones already noted with respect to Federal responsibility.

Municipal:

Table 29: Primary Responses to Question 30 Pertaining to Suggestions for Improvement in Determining and Measuring Impacts at the Municipal Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Better time frame/quicker/more efficient process	2	.3	6.9	6.9
	Difficult to measure the impact of project/better	4	.6	15.9	22.8
	Difficult to determine in detail because we use	4	.7	18.1	40.9
	Impacts measured by decrease in cost/deficit/other	9	1.3	35.6	76.6
	Other	6	.9	23.4	100.0
	Total	24	3.7	100.0	
Missing	NO RESPONSE	620	96.3		
Total		644	100.0		

Only 3.7 percent had responses respecting improvement at the municipal level. Generally responses stressed the difficulty of defining impact and, a bit more than some other response distributions, stressed the idea of defining impacts in terms of reduced deficits and costs. Presumably, this was with reference to infrastructure deficits.

The next question probes what is one of the main purposes of PBO's analysis of the ISF programme. In some respects, this question has a very literal relationship with the main goals of this analytic project. This does not guarantee it will produce the most useful results, but it is worth examining. Again, we will concentrate on the primary responses to this question even though it provided multiple response opportunities. As is the case with most multiple response questions in this study, substantive response dropped off quite a bit after the primary response.

31. If Parliament were asked to approve a similar program today, a key issue would be how and when the economic activity attributable to the program would reach the economy. In your view, how could the speed or nature of the economic impact of the ISF program be improved for any future program?

Table 30: Primary Responses to Question 31, "In your view, how could the speed or nature of the economic impact of the ISF program be improved for any future program?"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Faster/more efficient approval process	102	15.9	27.4	27.4
	Faster/more efficient process and receipt of funding	11	1.7	2.9	30.3
	More flexibility with start/end date of projects	32	5.0	8.6	38.9
	More flexibility to allocate funds	29	4.4	7.6	46.6
	Expand eligibility for different projects (pre-existing)	38	5.9	10.2	56.7
	On-going funding program for long-term	32	5.0	8.6	65.3
	Advanced funding to help planning/design process	14	2.1	3.7	69.0
	More information provided/better communication	16	2.4	4.2	73.2
	Help meet 'shovel ready' requirement	17	2.6	4.5	77.6
	Simpler/reduced reporting and administrative	8	1.3	2.2	79.8
	No suggestions / satisfied (all positive mentions)	55	8.6	14.8	94.7
	Other	20	3.1	5.3	100.0
	Total	373	57.9	100.0	
Missing	NO RESPONSE	271	42.1		
Total		644	100.0		

Over half the sample (57.9 percent) made suggestions here. There was a strong expression in favour of a faster/ more efficient approval process. There was also a stronger than usual expression in support of expanding the range of projects eligible for funding. This occurred elsewhere, but is relatively strong here. Finally, there were some responses that basically expressed approval of the ISF design pretty much as is. Some of the more frequent responses, as well as

others, are basically similar to what we have seen in some of the other primary open ended responses in this series.

In light of the number of respondents who provided substantive responses to this question, the way in which it generally picks up the same sorts of themes as preceding questions its particularly direct relevance to ISF and our analytic goals, we will make the results for question 31 our dependent variable in more elaborate analysis that follows.

Bivariate and Multivariate Patterns

Here, we will look at our standard set of drivers to see how they impact the primary responses to question 31. Interestingly, the standard tool kit of mean comparisons and measures of association is not well suited to examining the relation of a dependent polychotomy and more continuous independent variables. A few standard techniques can actual be adapted to this, but it might be a bit disconcerting for some readers. In light of this, it was decided to examine certain basic bivariate and multivariate relations using multinomial logistic regressions.

We tested the following variables and sets of variables in relation to the categorized responses to question 31:

1. Provinces represented as dichotomies in contrast with the territories
2. Project types represented by the number of each type of project in a community excluding the affordable housing category
3. The total value of all projects in a community
4. The total number of projects in a community
5. The average completion rate across all projects in a community
6. A combination of items 1,2 and 3

For the most part, these were very weak logistic regressions and did not yield anything substantively noteworthy. Thus, at present, we do not have a good understanding of the drivers of the kinds of suggestions that were made to improve IFS.

It seems likely that the core information embedded in suggestions such as those in question 31 must be accessed by refining how that information is defined for analytic purposes. As a first step in that refinement process, we took the primary responses to question 31 and turned them into one encompassing dichotomy. The contrast represented by the dichotomy is between those who provided some kind of suggested improvement and those who did not. When this was put into a binomial logistic regression with the provinces, frequencies of different project types and overall project value for a community as the independent drivers, we found that there was a reasonably healthy result. The overall explanatory power of this logistic regression is summarized in Table 31.

Table 31: Over Results for Binomial Logistic Regression with Dependent Variable a Dichotomized Version of Q. 31. Contrasting No Response with Some Response			
Cox & Snell Pseudo R Square	Nagelkerke Pseudo R Square	Incremental Significance Compared to Base Model	Percentage of Sample Correctly Classified
.07	.094	.004	64.8
N=644			

While this is not an overwhelming result and some of the secondary indicators of goodness of fit are not favourable, it does do better than chance in predicting a basic feature of responses on this dichotomy.

The coefficients are for the individual drivers are given below:

Table 32: Regression Coefficients for a Binomial Regression Using a Dichotomized Version of Question 31 as Dependent and Geographic Location, Numbers of Different Project Types and Total Value of all Projects in an Organization as Independent Variables

Independent Variables		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	ALBERTA	-1.660	1.111	2.234	1	.135	.190
	BC	-1.675	1.092	2.351	1	.125	.187
	MANITOBA	-2.430	1.149	4.473	1	.034	.088
	NEW_BRUNSWICK	-2.922	1.446	4.082	1	.043	.054
	NEWFOUNDLAND	-2.232	1.428	2.442	1	.118	.107
	NOVA_SCOTIA	.227	1.624	.020	1	.889	1.255
	ONTARIO	-1.421	1.079	1.735	1	.188	.241
	PEI	-1.606	1.438	1.247	1	.264	.201
	QUEBEC	-2.115	1.082	3.823	1	.051	.121
	SASKATCHEWAN	-.931	1.537	.367	1	.545	.394
	AIRPORT_TOTAL	.423	.880	.231	1	.631	1.526
	BROWNFIELD_TOTAL	.360	1.475	.060	1	.807	1.434
	COMM_CENTRE_TOTAL	-.266	.320	.688	1	.407	.767
	CULTURAL_TOTAL	-.376	.251	2.248	1	.134	.686
	DISASTER_TOTAL	-.305	1.092	.078	1	.780	.737
	HIGHWAY_TOTAL	-.055	.025	4.828	1	.028	.947
	LOCAL_ROAD_TOTAL	-.030	.029	1.058	1	.304	.971
	MUN_BUILDING_TOTAL	-.261	.132	3.867	1	.049	.771
	PARKS_TOTAL	.243	.210	1.341	1	.247	1.275
	PORT_TOTAL	1.704	1.242	1.881	1	.170	5.495
	PUB_TRANSIT_TOTAL	.096	.241	.158	1	.691	1.100
	SOLID_WASTE_TOTAL	-.150	.565	.071	1	.790	.860
	WASTEWATER_TOTAL	-.011	.027	.176	1	.675	.989
	TOT_VAL	.000	.000	3.285	1	.070	1.000
	Constant	2.090	1.070	3.819	1	.051	8.087

These results indicate that:

- Manitoba, New Brunswick and Quebec were less likely than other jurisdictions to have suggestions about improvement of ISF
- The higher the number of highway projects and municipal building projects in a recipient organization or community the less likely suggestions for ISF improvement were volunteered
- The total value of all projects in a recipient community or organization had a very tiny near significant impact on likelihood of response. It is so small, the software rounds it to zero in the case of the log odds coefficients and even odds or one in the case of the odds ratio coefficients.

It is probably safe to assume that low likelihood of providing suggestions for improvement has something to do with current satisfaction with IFS. It could also relate to such things as degree of experience with IFS or compatibility of IFS with certain types of projects. In any event, it does appear as though most jurisdictions and the prevalence of most project types have provided a moderate number of ideas about how the programme could be improved, but a few jurisdictions and projects types are particularly unlikely to be linked to suggestions for programme improvement.

Concluding Comments on Perceptions of Possible Improvements to ISF and Similar Programmes

There was a fair percentage of respondents who expressed ideas about improving project approval, planning and definition of impacts. However, the percentage was always less than half of the sample, and it became smaller as the point of reference for questions moved from the Federal, to the provincial/territorial and again to the municipal realm.

Comments about administration stressed themes such as having a better time frame for projects, faster approval and less information for monitoring purposes. Suggestions pertaining to planning picked up some of the same themes, but the benefit of long term funding and funding of design stage had a raised profile here. As far as definitions of impact and its measurement, basically respondents seemed to acknowledge that this was a difficult area. When the focus was the municipal level, the idea of looking at impacts in terms of reducing deficits and costs emerged a bit more strongly. This would make sense from a municipal perspective, but the exact meaning of this awaits a more careful examination of verbatim responses provided.

In the case of question 31, respondents were given a chance to express their views on how an ISF programme could be designed to produce better results in the future. Over half of the sample provided a response here, but some of these responses were more expressions of approval than anything else. Some of the themes mentioned in the results for the immediately preceding questions reappeared here. However, there was a particular emphasis in favour of a faster/ more efficient approval process and expanding the range of projects eligible for funding. This occurred elsewhere, but is relatively strong here.

When we tried to test various impacts on question 31 primary responses using multinomial logistic regression, the results were rather dismal. This simply indicates that, at this time, we do not know what drives responses to these types of questions. When the data were recast by making the indicator variable into a response/no response dichotomy for question 31 we found a reasonable preliminary explanatory model was possible. Yet, it mostly indicated that there were not vast differences in response/non response by jurisdiction or project type. Instead there were a few provinces and projects types that were more likely to be associated with non-response to this sort of question, and, in part, one assumes this represents a greater degree of satisfaction with ISF in its current form.

VIII. Concluding Discussion of Findings

Let us begin with a very capsulized review of the different sets of indicator variables, trying to keep to the most policy relevant results.

The first set of indicators measured satisfaction with basic administrative, management and planning processes pertaining to ISF. We have seen that there is generally modest satisfaction with various aspects of these processes, but there is certainly variation around this basic pattern. There was a fair amount of province/territory variation in satisfaction with fund transfer processes with Alberta, Manitoba and Nunavut being low on this indicator and New Brunswick, Newfoundland, Northwest Territory and Yukon being relatively high. This simply means that there are administrative variations in the way ISF is perceived to function across jurisdictions. However, these variations could have be a function of activities at both levels of government. Interestingly, the number of projects associated with a recipient organization had no major relationship with the indicators, and the total value of all projects linked to a recipient organization had only weak influence on the indicators. One might have thought that the complexity of a recipient organization's involvement with ISF would have more influence on the indicators. However, in general, ISF processes seem to be similarly perceived by those who have complex and simple relations with the programme. Alternatively, it was found that there were some relationships between the percentages of projects completed at a given point in time, and increased completion seemed to promote satisfaction. This probably means that many of the minor frustrations connected with ISF administration are worked out or put in perspective as projects progress. Finally, there was an indication that community centre/service type projects were negatively associated with satisfaction measures, and the reason for this is not clear. In summary, ISF recipient organizations tended to be moderately satisfied with ISF processes, and the specific substantive variations that appeared make sense but could only be understood with more detailed examination of specific cases

The second set of indicators reflected perceptions of impact of ISF projects in a number of general areas such as general community welfare, unemployment, earned income, environmental quality, alteration of construction prices and infrastructure deficit. Overall, respondents had a modestly positive view of impacts, but there was considerable variation. While responses indicating beneficial impacts tended to be dominant, there were many responses that indicated no impact or non-beneficial impacts. The results pertaining to perceived unemployment impacts are particularly worthy of note here given some of the goals underlying ISF. Also on the positive side of the ledger, the structure of the responses tend to suggest that respondents were thoughtful in answering the questions as there is no sense that there is some routinized response pattern tending toward all good or all bad evaluations of ISF.

There were many bivariate findings of note. Without rehearsing all the details contained in the main section on these findings, it is clear that there are major provincial/territorial variations on a number of the impact indicators. The important question is what importance does this have for future policy and programme design? These geographic variations will need to be considered

further in terms of the mix of projects types and sizes in different jurisdictions. Also, there may simply be scale and regional labour market explanations for some of these variations. If this were the case, than future programmes similar to ISF may benefit from more fine grained design with respect to local conditions, project type and, perhaps, even variations in local management capacity.

The total number of projects and the total number of specific categories of projects had little effect on impact perceptions, similar to results for the previous set of indicators. However, also similar to previous results, some of the few project type influences that stand out arise from numbers of community centre/service projects. Increases in numbers of such projects produced some beneficial and some non-beneficial results. In this particular segment of the analysis, there were also some minor relationships between perceptions and numbers of solid waste management projects. In light of the way these particular types of projects seem to stand out in parts of the analysis, it may well be that there is something about them that has a different fit with ISF than other project types. As we shall see later on, there is some evidence that solid waste management projects may not be an ideal focus for funding if a main goal is creating large numbers of reasonable quality jobs. Finally, the total value of projects per recipient organization has a number of small positive influences on several kinds of beneficial perceptions of impact.

The next set of indicators had to do with perceptions of systematic technical biases in the selection and approval of projects. Were there certain types of projects that were disadvantaged in the selection process? There is a substantial minority of respondents who thought there was some degree of bias in projection selection and approval. They may have viewed this either in terms of the types of assets dealt with in a project or in terms of time frames and planning for different types of projects. However, there was very little influence on these responses by the types of background variables we have used. To the extent that there were any sorts of relationships, it seemed that communities with more projects rather than less were more likely to perceive bias. Perhaps this just means that organizations with long lists of potential projects are more likely to encounter obstacles with respect to some of the projects.

The next set of indicators related to some of questions asked about a specific project in each recipient community or organization. Frankly, these turned out to be more fruitful and important than anticipated. The indicators have to do with the number of person years of employment created by a project, average gross pay associated with a person year, the extent to which the project was devoted to purely public infrastructure and the number of months a project was expedited as a result of ISF. Basic analysis showed that these indicators did indeed create significant jobs at reasonable salaries, mostly in the realm of purely public infrastructure and in notably expedited fashion as a result of ISF. This is all very positive with respect to the ISF programme.

Nevertheless, our background variables did influence these indicators in a number of ways. Related to this, this was the first set of indicators where we found not only interesting bivariate relations but also reasonably powerful multiple regressions. Projects located in some jurisdictions are much

more likely than others to generate reasonably large numbers of well paid positions and be considerably expedited compared to what would have been the case in the absence of ISF. In addition, some types of projects were much more likely to create relatively large number of jobs and/or positions with good reimbursement. Solid waste management projects were particularly ineffective in that regard. Alternatively, public transit was very effective at employment creation and airport, highway /regional transit and port/cruiseship type projects were particularly effective in producing higher paid employment.

Considerably more (and more sophisticated analysis) would probably need to be done to completely unpack the implications of these findings. However, one interpretation of the implications might be that ISF funding should be directed more explicitly to some types of projects than others. Another might be that there are lessons to be learned from some of the jurisdictions that have produced the most effective results of projects. Another set of lessons to be learned might be that some organizations need different rules or greater assistance to effectively participate in an ISF type programme. Some of the preliminary analysis of detailed verbatim responses by respondents provides moderate support for these possibilities. However, that is not central to this report.

Finally, we came to the results of some questions that asked respondent ways in which various aspects of ISF could be improved at the federal, provincial and municipal levels. In addition, there was a question asking how future programmes similar to ISF could be designed to achieve more beneficial impact.

There was a fair percentage of respondents who expressed ideas about improving project approval, planning and definition of impacts. However, the percentage was always less than half of the sample, and it became smaller as the point of reference for questions moved from the Federal, to the provincial/territorial and again to the municipal realm. In some ways, responses to these questions appear to tell a story similar that told by some of the question discussed at the beginning of the report. A portion of respondents do have questions and concerns about ISF, but, by and large they are not unfavourable in their assessments of it.

Depending on which process people focused on, the following emerged as suggestions with some frequency:

- Better time frames
- Faster approval
- Fewer reporting requirements
- Longer term funding
- Funding of design and planning activities
- A recognition that impacts are difficult to define and measure
- A desire to have an expanded range of projects eligible for funding

It is likely that these results could be elaborated usefully through a more fine grained consideration of the open ended responses to some questions. It is evident that some respondents devoted considerable thought to their perspective on programme improvement.

In closing, it seems fair to conclude that IFS was a reasonably well run funding programme and that it was perceived to produce some of the benefits that it was intended to produce. Yet, there are geographic, substantive and scale influences that determine variation in assessments of ISF. These causes of variation may provide a way of beginning to consider how future similar programmes could be more effectively targeted. In working through the implications of this, it may be that there are some elements that should be added to a future programme and others that should be removed. Certainly, there are those who see such programmes primarily in terms of expediting the creation, expansion and renewal of needed infrastructure. Others may see such programmes primarily as an instrument of creating economic stimulus with a useful secondary role in creating infrastructure or other outputs. At some point, it will be useful to engage infrastructure policy as a long term framework that, at certain times, may have some particularly useful derivative economic benefits. In conjunction with this, more specialized thought may have to be given to job creation/preservation policy and the instruments that can be quickly called into action during economic downturns in service of such a policy.

As a final methodological note, it should be said that the value of project specific data was enhanced in light of this analysis. That does not mean that more general questions asking for overviews of communities or sets of projects are without value. Indeed, they often proved to be of great value in this report. However, project specific questions proved to be easier to link to reasonably obvious independent variables. Such expanded explanation for general summaries and overviews of satisfaction will require other information and, perhaps, the passage of time to allow perceptions and their causes to stabilize.