Panama Canal Commission

A Strategy for Growth

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Chapter One: Introduction

The Panama Canal Commission has been constituted from its inception as a classic utility: serving an obvious and vital need, charging the users of that service the amount needed to cover the costs of providing it, administering the assets it controls responsibly and expertly. This model, widely accepted throughout the world as recently as a decade ago for a wide array of industries ranging from power companies to railroads to airlines to telecommunications, has been assaulted by the growing technological sophistication, openness, and flexibility of the rapidly evolving world economy. Market forces are carving out an ever wider domain at the expense of traditional utility structures. Those same forces which have led to the deregulation and privatization of myriad utility-like industries around the world are likewise impinging on the Panama Canal.

A more demanding and sophisticated customer population, a growing array of transportation alternatives, the ever-increasing efficiency of the competition, all are challenging the steady-as-she-goes traditions of the PCC. These manifestations of worldwide phenomena are compounded by the PCC's imminent change of ownership and corresponding shift in scale. Whether the PCC's revenues rise or fall by ten percent matters little to the U.S. economy. It could matter a great deal to the Panama economy. Positioning the Canal to take full advantage of its commercial potential in the evolving world economy is properly a matter of growing priority as the date of transition approaches.

Apart from the concerns set in motion by these tectonic shifts, there are several reasons why organizations generally wish to be alert to growth opportunities. Growth is needed over the long term to build enterprise value. It pre-empts the entropy that otherwise overtakes any organization. It challenges and revitalizes an institutional culture. And for the Panama Canal Commission in particular a sound growth strategy could provide a solid basis for Panamanian entrepreneurship.

All these are good reasons at least to explore the PCC's growth options, and this report discusses how such an exploration might proceed. Chapter Two notes the challenging tasks already facing the PCC over the next few years, tasks that must be taken into account in order to prevent growth planning from posing a dangerous distraction.

Chapter Three discusses the strategic opportunities that appear to exist and that warrant further exploration. Chapter Four proposes a planning strategy that would permit those opportunities to be fully evaluated without compromising the PCC's other objectives. Chapter Five outlines the work plan that would be implied in moving ahead with Phase II of the PCC's growth planning.

Whether the PCC proceeds with the Phase II evaluation should depend ultimately on the Commission's confidence in its ability to pursue parallel priorities. Arthur

Andersen believes that the process of growth planning outlined in Chapters Four and Five would be manageable and constructive, even in the context of the Commission's other priorities. That is a judgment call, however, and is highly dependent on the proper structure and management of the planning process. If the Commission concludes otherwise, and believes that such planning would pose a substantial risk to the attainment of the Commission's transition objectives, then Phase II should be deferred.

Chapter Two: The Challenges

The Panama Canal Commission faces three major challenges in the coming decade:

1. Effecting a smooth transfer of control from United States jurisdiction to Panamanian jurisdiction pursuant to the 1979 Treaties.

2. Finding a constructive role in the national economic strategy of the Republic of Panama.

3. Laying a foundation for continued growth in commercial value and enhanced utility to worldwide shipping in the Twenty-first Century.

This study addresses the third of these three challenges, but it cannot ignore the first and second. Any commercial undertaking the PCC contemplates must be consistent with its primary legal obligation of preparing for a transfer of sovereign control in 1999. Any commercial strategy the Canal organization ultimately adopts must conform with the national economic vision and structure conceived by the people of Panama.

The strategy must also recognize a number of other complicating factors;

- Two radically different decision time frames -- pre-2000 and post -2000
- Change in sovereign ownership
- Existing culture, tradition, and practices of the Canal
- The transitional imperative.

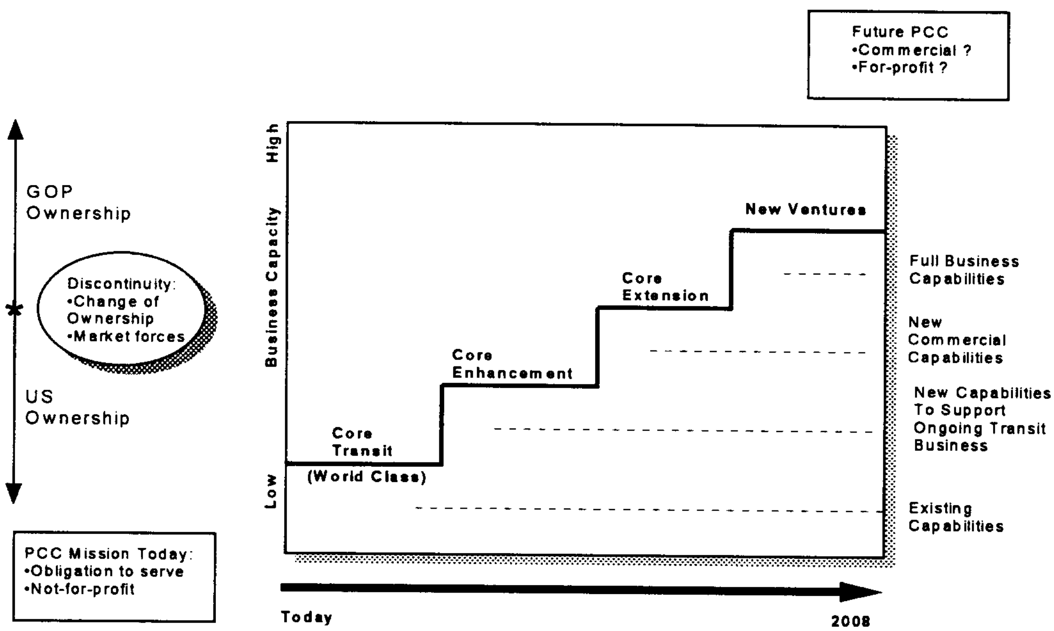
Clearly, these challenges are not beyond the capacity of Panama and the PCC to address effectively, but it will require a concerted, sustained, and good-faith effort to do so. These are not issues which can be decided in 1999. Decisions must be made in the next two years, so that implementation can be phased in over the succeeding three years. This is the first priority of the Commission. Plans for commercial growth cannot be pursued at the expense of this imperative. Consequently, any strategy for commercial growth adopted between now and 1999 must accommodate itself to the paramount needs of the Commission organization to accomplish a smooth transition.

Chapter Three: The Opportunities

With the existing core transit business as the point of departure, we envision a growth strategy comprised of business initiatives derived from the following growth platforms:

- Core enhancement - - opportunities to increase revenue within the core business, such as transiting more vessels, increasing revenue per vessel.
- Core extension - - new businesses which are based on services, functions, or activities that the PCC currently performs in support of Canal operations.
- New ventures - - entirely new businesses which nonetheless draw on existing institutional competencies.

The capabilities required to support each of these categories of business initiative are cumulative. Success in core enhancement would build skills permitting core extension, which in turn would provide skills for new ventures.



Specific growth opportunities within each of these categories include:

Category I Opportunities: Core Enhancement

- Strategic Opportunity 1: Pursue Value-Based Pricing of Transit Service
- Strategic Opportunity 2: Redesign Booking and Reservations Scheme

Category II Opportunities: Core Extension

- Strategy Opportunity 3: Develop Additional 100mW Power Generation Capacity and Restructure Existing Power Sales to IHRIE
- Strategy Opportunity 4: Sell Chilled Water for Cooling
- Strategic Opportunity 5: Expand Water Plant at Mt. Hope to Serve Growing Colon and Cristobal Needs. Alternatively, Divest Production Facilities to Generate Lump Sum Revenue.
- Strategic Opportunity 6: Offer Industrial and Maritime Training Programs Outside the PCC.
- Strategic Opportunity 7: Leverage the New VTMS System to Provide a Platform for Developing a Vessel Traffic Information System and Value Added Service to Ships in Ports, Anchorages, and Transiting Canal.
- Strategic Opportunity 8: Pursue Ship Repair Services, Initially in Partnership with Existing Commercial Repair Facility.
- Strategic Opportunity 9: Expand MTD Services.
- Strategic Opportunity 10: Deploy Excess Dredging Capacity for Commercial Purposes.

Category III Opportunities: New Ventures

- Strategic Opportunity 11: Deploy a Variety of PCC Assets and Capabilities to Directly Service and Catalyze Tourism Sector and Sector Development.
- Strategic Opportunity 12: Operate and/or Finance of Proposed Cross Isthmus Toll Road.
- Strategic Opportunity 13: Develop Strategic Alliances or Partnerships to Package and Deliver Bundles of Marine Services Consistent with and Complementary to the PCC's Core Transit Service.

Chapter Four: Planning Strategy

The PCC will need a strategy for planning for these opportunities that takes into account not only their commercial merits but also the particular challenges the PCC faces over the next several years.

- The commercial logic of the PCC's growth opportunities suggests a stage-by-stage approach, beginning with core enhancement and moving thereafter to core extension and new ventures.

- Most of the strategic opportunities identified are clearly forbidden to the PCC until at least the end of 1999. Planning, however, is not forbidden.

- Some of the strategic opportunities have greater impact on Panamanian aspirations than others. The greater the impact, the more important it will be to involve relevant Panamanian constituencies as well as the Panamanian government in the planning.

- Planning for growth must not interfere with planning for the transition. To the extent that it can facilitate such planning, all the better.

Arraying the strategic opportunities identified according to their commercial sequence and their legal permissibility yields the following picture. This map of opportunities suggests a schedule of planning and implementation and an approach to planning that will appropriately vary from one opportunity to another.

	Core Enhancement	Core Extension	New Ventures
Uncertain permissibility even post- 1999			11, 12, 13
Probably permitted, but only post- 1999	1	6, 7, 8, 9, 10	
Probably permitted pre-1999	2	3, 4, 5, 8(?)	

Chapter Five: A Proposed Work Plan

Phase II of the PCC's growth strategy study should encompass four major steps:

- Clarify and confirm the domain for the growth strategy.

- Complete detailed analysis of growth options culminating in detailed business plans outlining the opportunity

- Identify most desirable growth opportunities and finalize detailed growth strategy.

- Draft implementation plan.

CHAPTER ONE: INTRODUCTION

"When you come to a fork in the road, take it."
-- Yogi Berra

The Panama Canal Commission has been constituted from its inception as a classic utility: serving an obvious and vital need, charging the users of that service the amount needed to cover the costs of providing it, administering the assets it controls responsibly and expertly. This model, widely accepted throughout the world as recently as a decade ago for a wide array of industries ranging from power companies to railroads to airlines to telecommunications, has been assaulted by the growing technological sophistication, openness, and flexibility of the rapidly evolving world economy. Market forces are carving out an ever wider domain at the expense of traditional utility structures. Those same forces which have led to the deregulation and privatization of myriad utility-like industries around the world are likewise impinging on the Panama Canal.

A more demanding and sophisticated customer population, a growing array of transportation alternatives, the ever-increasing efficiency of the competition, all are challenging the steady-as-she-goes traditions of the PCC. These manifestations of worldwide phenomena are compounded by the PCC's imminent change of ownership and corresponding shift in scale. Whether the PCC's revenues rise or fall by ten percent matters little to the U.S. economy. It could matter a great deal to the Panama economy. Positioning the Canal to take full advantage of its commercial potential in the evolving world economy is properly a matter of growing priority as the date of transition approaches.

Apart from the concerns set in motion by these tectonic shifts, there are several reasons why organizations generally wish to be alert to growth opportunities.

1. *Growth builds enterprise value.* Typically the most obvious reason for growth is to enhance the business as an economic asset -- to leverage favorable returns on owner equity and increase the economic value of the business. By finding new and better ways of creating value for its customers, the business itself gains in value.

2. *Growth pre-empts entropy.* In a typical commercial enterprise, once a plateau is reached and sales level off, the product or organization has reached a state of maturity and stasis that will make it highly vulnerable on many fronts. It may lose its organizational edge, it may lose touch with its markets, it may fail to keep up with challenges from new competitors and new technologies. If the enterprise wishes to avoid the decline that typically follows such a plateau, it needs to renew itself by finding some new energizing impulse -- some source of growth, whether

from new applications for its product or new markets or new features or entirely new products.

3. *Growth challenges and revitalizes the institutional culture.* A growth objective challenges an organization continually to seek new markets, improved products, more effective ways of marketing, new ways to create value. If properly conceived, it inspires an institutional culture that is market-oriented, quality-conscious, risk-tolerant, and innovative.

In addition, there is an argument for growth that has particular application to the circumstances of the Panama Canal Commission:

4. *Growth can provide a solid basis for Panamanian entrepreneurship.* There would likely be an advantage to Panama in the Commission's beginning now to devise strategies, forecasts, cash-flow projections, and business plans for entrepreneurial expansions of Canal operations. Such plans would provide Panama a more realistic set of initial expectations for future development of the Canal region than Panama might otherwise have, and could provide a running start for Panamanian growth ambitions after 1999.

All these are good reasons at least to explore the PCC's growth options, and this report discusses how such an exploration might proceed. Chapter Two notes the challenging tasks already facing the PCC over the next few years, tasks that must be taken into account in order to prevent growth planning from becoming a dangerous distraction. Chapter Three discusses the strategic opportunities that appear to exist and that warrant further exploration. Chapter Four proposes a planning strategy that would permit those opportunities to be fully evaluated without compromising the PCC's other objectives. Chapter Five outlines the work plan that would be implied in moving ahead with Phase II of the PCC's growth planning.

Pursuant to the direction of the PCC, this report constitutes a preliminary review only. It proposes a framework for the evaluation of growth opportunities, as well as an initial assessment of the potential of those opportunities. It does not offer the kind of data and analysis that will be required should the Commission decide strategically to pursue these opportunities. Those tasks belong in Phase II of the Commission's growth analysis plan.

Whether the PCC proceeds with the Phase II evaluation should depend ultimately on the Commission's confidence in its ability to pursue parallel priorities. Arthur Andersen believes that the process of growth planning outlined in Chapters Four and Five would be manageable and constructive, even in the context of the Commission's other priorities. That is a judgment call, however, and is highly dependent on the proper structure and management of the planning process. If the Commission concludes otherwise, and believes that such planning would pose a substantial risk to the attainment of the Commission's transition objectives, then Phase II should be deferred.

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This study addresses the third of these three challenges, but it cannot ignore the first and second. Any commercial undertaking the PCC contemplates must be consistent with its primary legal obligation of preparing for a transfer of sovereign control in 1999. Any commercial strategy the Canal organization ultimately adopts must conform with the national economic vision and structure conceived by the people of Panama. Neither the Commission's transition plans nor Panama's economic plans are fixed points today. They are evolving, and while they will define the scope of commercial opportunity available to the Canal, they will also be shaped in turn by those opportunities. The PCC's strategy for commercial enhancement must allow for the inevitable interplay of all three challenges.

The PCC has operated as a Federal government entity since 1914. As a result of the Panama Canal Treaties of 1977, the PCC has been transitioning from U.S. government ownership to Panamanian ownership with the complete transfer to occur on December 31, 1999. The core business of the PCC is interoceanic transiting of ships through a canal across the Isthmus of Panama that provides a shortcut for ships engaged in international trade. Steadily since 1914, traffic has grown - both utilizing the excess capacity designed into the canal originally as well as capacity enhancements that have been made. In a global economy there are many alternatives available to using the Panama Canal, but it does enjoy a competitive advantage of varying degrees depending on the trade route. In recent years volume has grown in the range of two to four percent.

The pricing policy of the PCC has been cost recovery. Accordingly, prices are set to produce revenues which in the aggregate recover all costs of operating and maintaining the Panama Canal including capital improvements. These costs include a substantial annual payment to Panama provided by the 1977 Treaties, as well as a minor annual interest payment to the U.S. government reflecting only a small amount of the capital deployed. These prices, based on average cost of service, do not attempt to reflect or capture market value.

Other than this core business, the PCC does not serve any other markets. Starting with the construction of the Panama Canal, first the French then the U.S. made substantial investments to develop a service infrastructure to support the construction and operating employees of the Panama Canal. Thus, for many years Panama was a classic "company town" with the PCC owning and operating all elements of a small economy. Since the 1977 Treaties, however, the PCC has either transferred or liquidated all its non-core businesses.

Any PCC growth strategy accordingly faces several complicating factors. First, such a strategy must take account of two radically different time frames: the period between now and December 31, 1999, and the period following that date. During the first of these time frames the Commission is prohibited by Treaty from engaging in businesses and activities outside its narrowly constrained core mission. It is free to take steps that enhance the value generated by that core mission, but to the extent that it wishes to consider activities beyond that core mission, it can do no more than investigate and plan for those activities. It must stop short of implementing them.

In the second of these time frames - - the post-Transition period - - the PCC will no longer be constrained commercially by Treaty. It will, however, be subject for the first time to the laws of Panama and whatever rules and governance structure Panama chooses to impose.

This change in sovereign ownership provides the second complicating factor. The economy of Panama is relatively robust by Central American standards. With a population of about 3 million, the GDP of Panama is approximately $5 billion. The center of all business is Panama City, with interior cities supporting an agricultural economy. The economy of Panama consists of the following major elements:

- Panama Canal and U.S. military bases. The U.S. military bases are phasing down and are scheduled for closure in the year 1999.

- Banking. Since the currency of Panama is the dollar, it has provided the basis for a strong Central American and South American banking system. Literally all major banks of the world have branch operations in Panama.

- Transshipment free port. Adjacent to the Atlantic port of Cristobal is a huge duty-free shipment facility. It is used by manufacturers as a central supply point for Central and South America. Thus, manufacturers such as Motorola, IBM, Sony, and Siemens warehouse appliances and parts in the Cristobal free zone. The annual volume of this facility exceeds $10 billion.

- Agriculture.

There is no manufacturing sector in Panama; thus technology skills such as engineering are in very limited supply.

Adding the Canal, with its annual revenues of over $500 million, to this economic mix will clearly inspire significant readjustments of the entire economy. Many Panamanians believe that once the Canal is transferred it will provide a foundation for a diverse set of industries linked to Canal operations - - and will constitute the centerpiece of Panama's future economy. This vision, sometimes referred to as the "Singapore" or "Hong Kong" model, contemplates aggressive exploitation of the "cross-roads" asset the Canal represents. Clearly the Government of Panama will wish to harness this asset in a way that contributes to the growth, health, and balance of the Panamanian economy. And clearly the commercial mission of the Canal will be shaped by national policy.

That Panamanian law will assuredly constrain and channel the PCC's scope of activities is not a reason to defer consideration now of what those options might be. Strategies, forecasts, cash-flow projections, and business plans for the entrepreneurial expansion of the Canal's commercial role can provide Panama a more realistic set of initial expectations for future development than Panama might otherwise have, can provide a running start for Panamanian growth ambitions after 1999, and can help shape Panama's awareness of the opportunities and limitations implicit in the various statutory options it will consider. However, consideration by the Commission even today of plans that would be effected after 1999 must clearly take place in the context of a larger dialogue with the Government of Panama over the future of the Canal organization.

A third factor complicating plans for commercial enhancement is the Commission's existing internal culture, traditions, and methods of conducting business. At present the Canal is expected to enjoy only modest growth for the foreseeable future -- tonnage increases in the range of one-and-a-half to two percent per year. This projection reflects expectations of changes in world trade volume, shipping patterns, and transit technology -- factors largely outside the power of the Commission to affect. The Commission continually consults its major customers on ways to improve service, provide customer value, and attract additional business. Nonetheless, its primary business focus has not been to "build business" but rather to "provide value to the world shipping community." Its ethos has been that of a customer-friendly public utility, not an entrepreneurial marketer. Its skills have been in planning, administration, maintenance, supply, customer relations, and operations; not in aggressive business development or market strategy. Appropriately so. This traditional role has fit the mission established by statute and treaty.

At the same time, not surprisingly, this traditional role has fostered an institutional culture of strong, steady, and professional administration rather than a culture of risk-taking, market attentiveness, and entrepreneurship. A strategy of aggressive business growth will require an organizational as well as commercial strategy. It will require new management information and decision support tools, new techniques of understanding and managing costs, and a new look at such elements of commercial competitiveness as wages, salaries, and incentives.

The fourth complicating factor is the transitional imperative. The Treaties of 1977 provided twenty years to prepare for the transition of the Canal to Panama. Three fourths of that span have now elapsed. The Commission itself has made substantial efforts to train and promote Panamanian nationals so that the Canal can be properly operated by Panamanians after 1999. Broader institutional issues, however, have yet to be addressed systematically, and numerous policy issues remain. These remaining issues will require a concerted, sustained, and good-faith effort to address and resolve. This is the first priority of the Commission. Other objectives cannot be pursued at the expense of this imperative. Consequently, any strategy for long-term commercial growth adopted between now and 1999 must accommodate itself to the paramount needs of the Commission organization to accomplish a smooth transition.

In sum, any strategy the PCC adopts today for pursuing future growth opportunities must recognize the limited opportunities for implementation that exist between now and 1999. It must accommodate the need for careful coordination with the Government of Panama for any plans affecting the period after 1999. It must encompass some measure of organizational transformation to develop and enhance the Canal's commercial business processes and perspectives. And it must above all ensure that the process of planning and preparing for commercial growth does not interfere with the process of planning and preparing for the 1999 transition.

CHAPTER THREE: THE OPPORTUNITIES

A Growth Strategy Framework

An enterprise can enhance its commercial value in any of three fundamental ways. It can perform its existing functions more efficiently - - through process redesign, technological innovation, investment, or improved skills. It can redeploy its resources away from functions, activities, and products that create lesser value and toward those that create greater value - - through divestiture, outsourcing, reassignment of personnel, or improved financial leverage. And it can devise ways of growing its revenue - - through more successful marketing of existing products and through profitable introduction of new products. The management of a commercial enterprise consists in the simultaneous application of these three techniques, with varying degrees of emphasis, to create value.

This report is concerned primarily with the third of these techniques - - the opportunities the Canal may have to grow revenue. The first two, however, are worth at least passing mention, partly because greater value opportunities often lie in consolidation and efficiency than in expansion, and partly because a regulated, break-even organization like the Panama Canal Commission may in the normal course of events overlook such opportunities. A regulated utility has little commercial incentive to explore cost reduction aggressively, since cost reductions are simply passed on to customers - - creating greater economic value for the customer, but not for the enterprise itself. To be sure, responsible administrators will always wish to ensure that operations are efficient, but they nonetheless are insulated to some degree from the urgent economic pressure that drives profit-seeking firms to streamline operations continually. As the Canal organization looks beyond 1999 to a possible profit-making role, these cost-reduction and asset-redeployment opportunities will deserve greater attention.

Ultimately, however, continued growth in value will require growth in revenue. And sustained, purposeful revenue growth generally proceeds from the presence of four factors:

- new commercial opportunities and threats created by some discontinuity in the environment,
- platforms of capabilities - - special institutional competencies, strategic assets, or special relationships - - which provide distinctive commercial advantage and match the initiatives pursued,

- a logical sequence of initiatives, each of which builds upon successes gained in the preceding initiatives, and

- an organizational commitment to taking advantage of such opportunities.

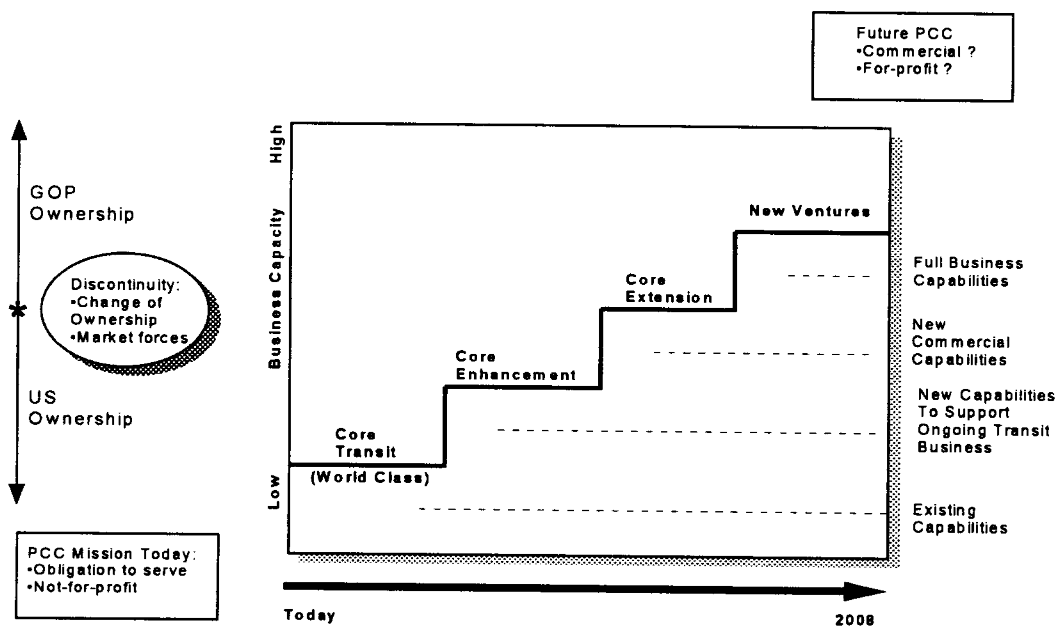
A growth strategy for the Panama Canal Commission must consider each of these factors. The relevant discontinuities are growing competition for world shipping volume, constrained capacity in the Canal facility itself, the imminent transfer of ownership from the US to Panama, and a new - - as yet undefined - - set of performance expectations after 1999. The existing capabilities are skills in infrastructure management and planning and in-transit operations, plus the control of a unique strategic asset. The logical sequence of initiatives that would build outward from this existing platform would appear to be:

- Core enhancement - - opportunities to increase revenue within the core business, such as transiting more vessels, increasing revenue per vessel.

- Core extension - - new businesses which are based on services, functions, or activities that the PCC currently performs in support of Canal operations.

- New ventures - - entirely new businesses which nonetheless draw on established institutional competencies.

The capability platforms required to support each of these categories of business initiative are cumulative. Success in core enhancement would build skills permitting core extension, which in turn would provide skills for new ventures.



The organizational commitment required to pursue successfully a sequence of increasingly challenging revenue initiatives comprises a number of linked behaviors. Successful growth companies seem to display several common characteristics:

- A clear growth vision: defining aspirations and directions for growth, establishing well-defined performance objectives and measures.
- Pursuit of multiple paths: exploring a broad spectrum of growth options and techniques.
- A search for advantage: pursuing opportunities in related, and frequently niche, markets, where leadership position can be established and maintained.
- Market insight: defining opportunities from an understanding of customer needs rather than from a convenient extension of operating capabilities.
- Consistency of skills: limiting responses to those market-driven opportunities which are also suited to existing skills, recognizing that as skills are enriched through market expansion, more such opportunities become available.
- A growth culture: supporting growth initiatives from the top, devoting appropriate resources to the growth program, setting ambitious objectives, allowing for experimentation, accepting occasional failure as a learning process.
- A disposition to act: recognizing that successful revenue growth is 10 percent idea generation and 90 percent execution.

A growth strategy for the PCC will involve moving from its current strategy platform through a series of new platforms, each platform representing the evolution to a new and more complex and generally more demanding business environment, each platform generating the cash needed to support successful elevation to the next platform. At each of the strategy platforms there are several discrete business or growth opportunity initiatives that the PCC could pursue. Some such initiatives may represent significant revenue and profit opportunity, while others represent less substantial revenue opportunity but might nurture essential skills or capabilities necessary for other growth options.

Identifying Strategic Growth Opportunities

The opportunities reviewed below are culled from interviews and meetings held with a number of PCC employees, with representatives of other Panamanian interests such as the water, telephone, and electric companies, with representatives of the Government of Panama, and with individuals in the maritime industry familiar with the use of the Panama Canal. The intent of these discussions was (1) to generate ideas, (2) to understand which existing functions within the PCC might have commercial application and what scale of investment or organizational adaptation would be required to exploit those applications, and (3) to explore with potential customers how the Canal organization could potentially serve them.

Each opportunity identified was screened according to three questions:

- Is it something that the PCC is advantageously positioned to accomplish. Does it appeal to some core competency or capability, or would this product be just as competently supplied by alternative providers with the Panama business community?

- Is there a perceived or tested material market demand for it?

- Would it have a negative impact on the PCC's core business of transiting vessels?

Several opportunities mentioned in interviews were eliminated as a result of this initial screening. For example:

- Inventory management services

- Print shop services

- Management information systems

- Telephone/communications services

Inventory management did not appear to offer an easily defined product or service. While the print shop has a full service capability, except for color separation, there did not appear to be a material business opportunity for which they maintain a competitive advantage. With respect to information services and the telephone/communications system, notwithstanding a broad array of capabilities, it was difficult at this time to identify a market opportunity or how those capabilities could be shaped to meet an potentially emerging market demand. The near-term risk of distracting management of these key functions from core transit operations in pursuit of an ill-defined and modest external market seemed disproportionate.

These judgments, of course, are contingent on circumstance, and as market opportunities unforeseen today surface in the future, or as distinctive capabilities evolve or emerge, these judgments should be revisited. A growth-oriented company is always experimenting, and no product idea should be considered foreclosed permanently.

Other functional areas which would be worth considering in the future as tactical business opportunities include:

- Canal Protection
- Meteorological and Hydrographic
- Surveys
- Facilities Management
- Management Development
- Aid to Navigation
- Other Engineering Division Branches and engineering in general.

None of these opportunities, however, seems at present to address a significant enough market to warrant attention as strategic initiative.

Those opportunities which did pass this initial screen are discussed below, and tentative assessments are offered with respect to several criteria:

- Revenue/profitability -- how large are the anticipated revenue flows and what is the likely profit to be derived?
- Investment required -- how much and what kind of investment should be expected in order to realize the potential revenue stream?
- Risk profile -- How risky or variable might the revenues be, and what is the source of the risk?
- Competition -- Is there significant competition in this business both today and within a reasonable time frame? What is the basis for competition and is it expected to change?
- Timing -- Is the opportunity perishable, in terms of market demand or the entry or repositioning of competition?
- PCC Readiness -- Is the PCC ready and prepared to pursue the opportunity in a manner consistent with market expectations and competitive demands?
- Fit with GOP initiatives -- Is the opportunity consistent with, and supportive of, known GOP economic development initiatives and imperatives?

- Systemic Effect with Other PCC Activities -- Does the opportunity leverage other opportunities such that the combination creates more value than the sum of what each opportunity could produce individually? Does it build momentum, or does it detract from other initiatives?

The purpose of these criteria is to provide a framework for understanding and comparing the strategic benefits of the opportunities discussed. The present assessments are highly tentative. In subsequent phases of planning, the PCC would focus its investigations on providing more specific assessments of each proposal employing these criteria.

Category I Opportunities: Core Enhancement

The Panama Canal was born as a strategic transportation system serving U.S. military and domestic requirements. It subsequently developed into an international service. After the Second World War and the development of the Asian and Pacific Rim economies, the Panama Canal was on the international transportation superhighway. But its status continues to evolve and today it can be better characterized as a powerful niche player in the world's transportation system. The markets which it serves have changed and continue to change in ways that offer both opportunities and threats.

The broad dynamics of liberalized world trade and falling market barriers have led to increased competition among international shipping lines and a focus on more efficient and responsive service and lower cost. The shipping lines in turn want greater predictability, flexibility, and customer responsiveness from their suppliers. These dynamics are manifest in several ways.

- Trends toward alliances. Increased competition is fundamentally changing the conduct of business. During the past year, a number of the world's ocean carriers have formed alliances to expand and rationalize their service coverage, hoping thereby to minimize operational differences and limit competition to sales and marketing. Sea Land and Maersk have agreed to expand their existing joint services to cover every trade lane. P&O Containers, Hapay-Lloyd, Nippon Yusen Kaisha, and Neptune Orient line's 80-ship global alliance is focusing on the major East-West ocean trade routes (Europe - Far East, Far East - Suez, Asia - U.S. East Coast, transpacific) as well as inland routes. Shippers are responding by forming alliances or global buying/negotiating groups, to increase their bargaining clout with carriers and to gain the same competitive rates and services as their larger counterparts.

- New and expanded vessel sharing agreements. Faced with increased service demands, price competition, and ongoing regulatory confrontations, the global shipping carriers are re-aligning themselves through new and expanded vessel sharing agreements or VSA's. VSA's were originally intended to cut down on vessel overcapacity and make better use of expensive ocean-going assets but are now growing both in size and scope, and are beginning to venture into the sharing of containers, marine terminals, space on double stack trains, and road freight. VSA's serve to lower expenses, reduce risk and allow greater geographic coverage with less capital outlay. They permit orderly tonnage expansion and provide the flexibility needed to respond to market change. Equally important, VSA's provide efficient equipment utilization and the opportunity to rationalize assets. While the increased service frequency and faster transit times that often come with VSA's are benefits for shippers, there is a downside to these agreements. The new wave of VSA's signals the growing dominance of a handful of carriers and potentially fewer service options (and routing alternatives) for shippers.

- Upscaling of ship size. As new alliances have been coming together during the past few years, carriers have placed orders for over 50 container ships with individual capacities greater than 5,000 TEUs. These big post-Panamax ships comprise nearly half of the orders for new container ships scheduled for delivery during the next 3 years. The mega ships are too large to fit through the Panama Canal, and their size limits them to transpacific or Europe-Asia trade. They will be used on a fixed-day, regular round-the-world service schedule supported by regional feeder service connections. Upscaling in ship size is leading to a reduction in the number of ports visited per continent by a vessel. In the process, shippers will suffer reduced service at ports considered to be off the beaten track or unable to handle the larger size of ship.

- Rationalization of ports and emergence of mega hub ports. A major port must have cranes to accommodate these larger ships, must have 24-hour operation, and must be able to discharge 1,000 to 2,000 containers in a short time period. On-dock rail, ability to reserve berths and cranes so ships are not kept waiting, automated gates, and sophisticated computer systems are increasingly important. The movement towards VSA's has led to rationalization of ports and to the emergence of major "hub" ports fed by other smaller ports. Singapore and Hong Kong have become hubs for a bevy of regional Asian ports. Long Beach/World Port in Los Angeles provides a similar function for the U.S. west coast. These ports are the turntables in the logistics networks, offering transshipment, cargo consolidation, distribution, and warehousing, and production and assembly operations. Competition among ports has led to consolidations. Three ports in the Tampa Bay area (St. Petersburg, Port of Tampa, and Port Manatee),for instance, are talking about forming a coalition to market to international shippers.

- Multimodalism as a competitive option. The increased competition in global shipping has led shippers increasingly to assemble overall intermodal transportation packages. Maersk, for example, owns terminal operations on both the east and west coast of the U.S. and owns two trucking companies to meet intermodal needs. Technology is also playing a role; larger carriers make use of sophisticated computer systems to strengthen their international service network and boost competitiveness.

Given these trends, and faced with increased competition and tighter operating schedules, the Canal's customers have expressed concern about...

- the transition to Panamanian stewardship, with special concern over issues such as toll rate policies, safety matters, and port/state inspections under Panamanian control,

- a lack of customer orientation, especially during crisis times (*e.g.*, backlog management during January, 1995), and

- the need for tighter adherence to schedule and predictability.

As the markets which the Panama Canal serves have changed so have the levels of traffic growth. When the Panama Canal was on the water transportation superhighway it enjoyed very strong growth. Today that growth, although positive, has moderated to an annual rate of two to three percent, and even that level of growth is bumping up against capacity limitations. These limitations are being addressed by the current cut widening program, but even after this program is completed the additional ship transit capacity will be no more than 25%. With growth rates of 2-3% compounded annually that increment of capacity could be fully utilized within ten years.

Strategic Opportunity 1: Pursue Value-Based Pricing of Transit Service

Notwithstanding the relatively modest growth in transit volume the Canal can expect, opportunities for revenue growth are substantial if the Canal were to move from cost-based tolls to value-based pricing. The U.S. government's policy is that the Panama Canal Commission should recover its costs through tolls on users. As the word "tolls" suggests, this policy results in simply a tax or user charge. The toll rate is set at a level such that the yield in revenues is equal to the total cost of operating the Panama Canal.

The system of toll assessment is designed using essentially a flat-rate pricing system based on tonnage. The PCC assesses ships per net ton under its own rules of measurement referred to as the PC/UMS Net Ton - - a volumetric determination of the ship's capacity to carry cargo. A rate differentiation is given for ships in ballast (empty) versus ships that are laden. Ships in ballast receive a 25% discount off the laden rate.

Although conceptually the volumetric capacity of a ship to carry cargo is easily understood, in practice there is room for controversy. Historically cargo carried on a ship's deck was excluded from tolls assessment. With the introduction of container ships this practice has been continued and the issue has been raised and debated whether such containers on deck should be includable in the volumetric capacity determination of the ship for purposes of tolls assessment. Since the toll assessment process is based on physical features and administrative rules rather than the economic value of the Canal to the ship, it fosters interpretive controversy of this kind.

Although not considered part of the tolls revenue of the Panama Canal, a variety of additional charges are assessed against ships for specific services such as tug assistance and line handling. These rates are designed in the aggregate to cover the cost of the specific services. As with any cost based prices, there is always some controversy over how costs are defined for purposes of determining price.

The present pricing system on the Panama Canal thus is based on law, cost accounting, regulations, and the physical features of a ship. In the aggregate the toll and other revenues have equaled the total cost of operating the Panama Canal to a remarkable degree. What they have not done nearly as well is to reflect the market value of the services provided.

As canal capacity is approached, significant revenue growth via tolls can only be accomplished through a more economically efficient allocation of transits. That is to promote, by means of price signals, transits of vessels which are the *economically preferred* customers of the canal and for which the canal transit has a special value which can be explicitly reflected in the transit price. This approach would require developing a customer-focused market segmentation scheme combined with value-based pricing. It would require that each potential customer group be targeted to receive its optimal level and quality of services while paying amounts commensurate with its user surplus or excess value compared to alternatives to the Canal.

Customer groupings would be based on ship size, routing and transportation mode, the value of the commodity, volume, potential growth, variability of traffic, perishability, and related characteristics. The frequency of transactions with specific carriers and shippers would be analysed with a view to identifying ways value can be enhanced for them and Panama.

A long-term incremental cost standard would be used to assess whether core business transactions enhance value to the Canal. All ship transits that provide revenue sufficient to cover the additional costs of such transits would be accommodated when capacity is available; ships that provide the greatest contribution to overhead and profit would be accorded higher priority when capacity is constrained.

It is highly probable that some potential customers bypass the Canal today, and the PCC loses profitable business, because ship tolls are based on tonnage whereas PCC costs are related primarily to the number of individual ship transits. Some customers would benefit from using the Canal and would be willing to pay a price sufficient to cover the PCC's avoidable costs, but they are using alternative routes and modes of transport because the Panama Canal tolls are too high. This lost traffic is what economists term *uneconomic bypass* (as distinguished from *economic bypass*, which is traffic lost because the Panama Canal cannot compete with alternative routes or modes of transport). It harms not only the PCC but also the lost customers who pay more and/or receive inferior service from their alternative service providers.

Cross subsidies are the flip side of the *uneconomic bypass* coin. Some customers may currently pay less than avoidable costs and are being cross-subsidised by revenues received from other customers.

Eliminating cross subsidies is reasonably straightforward. All that needs to be done is to ascertain the marginal costs of transiting each major type of vessel and then to ensure that tolls, bookings charges, and tariffs are high enough to recover these costs.

Eliminating uneconomic bypass is more difficult because information is required on the preferences and alternative costs of shippers and operators. However, the potential gains for the PCC and its customers from ascertaining and using this information are substantial. By failing to develop this information, and to take advantage of its inherent competitive advantages, the PCC has influenced ship building, port construction and patterns of shipping. At the margin it might have been possible to influence these decisions by negotiating long term agreements that would tip the economic calculations in favor of building more Panamax ships and using routes requiring Panama Canal transit. The failure to take these steps, of course, has not been a failure of management but rather the consequence of U.S. law, which requires the Canal to employ cost-based toll principles. The policy has been mandated, but it has had its costs, and the prospects of the PCC for future revenue growth will depend largely upon its ability and willingness in the future to offer flexible and market-based prices and negotiated contracts.

The key, of course, is to recognize and attempt to quantify diverse buyer values. Some shippers and carriers place a high value on shortening the duration of voyage; other shippers and carriers are influenced primarily by canal transit costs. In general, operators of large ships who carry high-value, fully-laden cargoes, such as large dry bulk, container, vehicle and passenger carriers, compete more on the basis of voyage time and meeting their scheduled arrival times; operators of smaller ships and those who carry low-value and partially loaded cargoes derive relatively less benefit from shorter voyage times.

Considerations like these provide the PCC with opportunities to enhance value for itself and for Canal customers. The basic strategy would be to provide additional services that can be sold for a price that at least its cost; the upper limit of that price would be the extra value a customer derives from the enhanced service. Where between that floor and that ceiling the price actually settles would be determined by one or more of several possible pricing mechanisms:

> Auctions. A straightforward way to clear the market and to elicit information from bidders about the value they expect to receive from using the waterway, this type of procedure is used to allocate communications channels, airport landing slots, etc. Auctions could be structured for long-term resellable transit rights, with many possible variations.
>
> Posted prices. Posted prices for canal transit might be changed daily, weekly or annually, or spot price could be negotiated with each ship that transits the canal.

The practice of posting prices is standard practice for most transportation companies, but the policies that underlie posting vary depending on the mode of transport, level of competition and related customer and seller characteristic. Airlines, for example, post a complex set of prices based on the quality of service and expected capacity utilization. PCC customers similarly could be offered a menu of posted prices based on service quality and allowed to self select in a similar manner. How frequently posted price should be changed would depend on the volatility of competitive conditions in the market and the general level of inflation.

Long-term Contracting. Shipping companies operate in highly competitive markets, and a large proportion of their costs are tied up in the ships that are designed for specific types of cargo and shipping routes. For such customers, who place a high value on predictability, long-term contracts individually negotiated may provide an element of value that could be captured in those contracts. Such agreements could vary depending upon how frequently the customer uses the canal, and the customer's willingness to make commitments to that use through "take-or- pay" and related agreements. Price and service concessions could be negotiated for credible commitments to invest in and use core-related services.

Strategic Opportunity 1: Summary Evaluation

Revenue/ Profitability:	Revenue increases are expected to be significant with a high profit margin since implementation investment requirements and incremental expenses are expected to be low.	PCC Readiness	Will require a fundamental acceptance and deployment of a new pricing concept which represents a paradigm shift in terms of both current law and PCC mission perspectives.
Investment Required	Investment will consist of marginal cost study of canal, customer market research focusing developing customer value propositions. Some additional investment will be needed to set and operate the pricing system.	Fit w/GOP Initiatives	Can be a key leverage point for assisting in the successful realization of other maritime and related developments.
Risk Profile	Low risk; initial market resistance will be encountered.	Systemic Effects	None.
Competition	None.	Other Issues:	Political considerations that may result to users that may be faced with increased transit costs without a corresponding value improvement.
Timing	Implementation is constrained to post 1999, however, initial planning and implementation can begin to ready both PCC and the market.		

<u>Strategic Opportunity 2: Redesign Booking and Reservations Scheme</u>

The booking and reservations system, which is greatly valued by certain of the canal's customer segments, is another existing revenue "system" in which the PCC's pricing scheme reflects neither customer value equations nor canal capacity optimization. The present booking system is allocated 16 transits per day, representing 50% of the canal capacity transits at the time the system was first deployed, and currently generating revenues of approximately $16 million per year. A reservation is an entitlement to transit the canal at a specific time and is valued highly by some customers. Vessels that request reservation service pay a minimum booking fee of $1,500 and possibly more based on a Panama Canal gross ton rate of $0.23 ($0.26 per PC/UMS net ton). Thus, transit booking fees for ships larger than 6,500 Panama Canal gross tons are based on tonnage. This pricing system is almost identical to the tolls system in basic design.

Since the booking and reservation fee does not reflect market conditions, an opportunity exists to refine the systems pricing to provide a more economically optimal benefit to the PCC while at the same time attempting to reflect the customer value of the system. A reservation is valuable only when the canal is expected to be unavailable when the customer arrives at the locks. In recent years customers have come to expect to wait for transit and the reservation has become a valuable property right. Limited numbers of reservations can currently be purchased only a few days in advance of transit at fixed posted prices. It is likely that reservation privileges are currently being offered at less than market-clearing prices. The administrative costs of the ship brokers who assign personnel to wait in line for the limited number of available reservations are a pure waste of manpower and a nuisance to the PCC. A well designed and administered system would enhance value for the PCC and its customers.

Since the value of a reservation fluctuates with the level of capacity utilization, a fixed price reservation system is bound to be suboptimal. The PCC could consider the merits of developing a system of posted reservation fees that vary with the level of capacity utilization. This approach would serve the needs of customers for spot or short-term transactions while providing a basis for including booking commitments in long-term contracts. Replacing the current system based on flat tonnage fees and a first-come-first served with tie-breaker administrative rules should be accorded a high priority.

Five alternatives to the present system could be considered:

- Increasing the number of slots to 21 reflecting the Canal's current daily capacity.

- Creating a premium booking fee that guarantees the booking commitment regardless of canal conditions.

- Structuring the booking fee on a seasonal basis, increasing the fee during the high transit season to reflect increase demand, and lowering the fee during the low transit season to entice additional bookings.

- Structuring the booking fee on a customer or market value basis similar to the proposal to restructure the toll system.

- Developing a bidding system for some or all of the slots.

Strategic Opportunity 2: Summary Evaluation

Revenue/ Profitability	Variable, but substantial, depending on specific approach taken.	PCC Readiness	High; could be seen as continued evolution of booking system development.
Investment Required	Small; some requirements for a pricing sensitivity and strategy analysis coupled with possible improvements to booking system logistics – electronic reservations.	Fit w/GOP Initiatives	None.
Risk Profile	Very low risk overall. May be some additional complaints from canal customers who can't use the system.	Systemic Effects	None to Limited; may set tone for other value based pricing strategies.
Competition	None.	Other Issues	
Timing	Immediate.		

Category II Opportunities: Core Extension

The core extension category comprises a series of opportunities that lie beyond the Commission's current core business but nonetheless take advantage of existing activities, skills, and capabilities. In addition to providing incremental revenue, these opportunities also provide a platform for developing new competitive capabilities and market discipline out of existing strengths.

Strategy Opportunity 3: Develop Additional 100mW Power Generation Capacity and Restructure Existing Power Sales to IHRIE

The PCC currently sells the excess power it generates for canal operations to the DOD and to IHRIE. Power sold to IHRIE is sold as available at what has been described as a "spot market" price. The PCC has the opportunity to develop additional capacity at its Gatun power station and to restructure its power sales to IHRIE at prices that would still be favorable to IHRIE but would also be more advantageous to the PCC. There are a number of approaches that the PCC could take to pursue this opportunity, particularly given the privatization initiatives underway for power supply in Panama. For example, the PCC could form a joint venture with an independent power producer by "contributing" the site to the venture and in return participate as an equity partner without having to put up any cash. A related opportunity would be to effect a sale/leaseback arrangement for all the gas and fossil generators that the PCC owns and operates.

As the privatization of Panama's power system proceeds, the PCC should also consider options available to it as a purchaser of electricity. It will likely find that the highest total value comes from being both a supplier to and a customer of the country's electric system.

Strategic Opportunity 3: Summary Evaluation

Revenue/ Profitability	Restructuring the existing sales to IHRIE will yield additional incremental revenues with a high profit margin. Sale of new capacity/energy could produce additional annual revenues on the order of $5-10 million.	PCC Readiness	Relying on existing business dealings with IHRIE, the PCC is positioned to proceed but will need to commit to the terms of the contract.
Investment Required	Investment required to develop additional 100mW at Gatun is estimated to cost approximately $5,000,000.	Fit w/GOP Initiatives	High likelihood of consistency with GOP privatization efforts.
Risk Profile	Development risk of the additional capacity is expected to be nominal. Payment risk from IHRIE is a consideration which might be hedged with alternative "standby" purchases.	Systemic Effects	None anticipated.
Competition	IPP developers will be in the market, but the expected sitting advantages of Gatun should produce a price advantage to the PCC.	Other Issues	
Timing	Immediate; continued movement to privatization could close opportunity.		

Strategy Opportunity 4: Sell Chilled Water for Cooling

The three 1000 ton chillers that the PCC operates offer an opportunity to sell chilled water for space conditioning to facilities on or adjacent to the chilled water loop. The PCC has been selling chilled water, at cost, to DOD as well as to the GOP. It could begin procuring long term, 3-5 year minimum, contracts for the sale of the chilled water to these existing facilities at market rates as well as seeking new customers for which capacity is currently or reasonably expected to be available. Such additional capacity could likely be made available for sale through management of the cooling peak load demands. With a well developed load management program, designed to control the coincident peaks, up to 1000 tons of additional cooling capacity would be available. At the current price of $58 per ton per month, this initiative could generate an additional $600,000/yr in revenue.

Strategic Opportunity 4: Summary Evaluation

Revenue/ Profitability	Revenue stream is expected to be moderate but with high profit margins	PCC Readiness	As PCC is currently selling this commodity, it is reasonably well positioned and capable of proceeding with this opportunity.
Investment Required	Limited; new investment anticipated largely for demand management program.	Fit w/GOP Initiatives	Likely fit; can be promoted as an additional attribute of the facilities to support highest and best use.
Risk Profile	Low.	Systemic Effects	Helps PCC prepare for core extension and new growth options.
Competition	Facilities invest in on-site cooling if pricing is above market.	Other Issues	
Timing	Immediate; window of opportunity not likely to close, but it is not guaranteed.		

Strategic Opportunity 5: Expand Water Plant at Mt . Hope to Serve Growing Colon and Cristobal Needs. Alternatively, Divest Production Facilities to Generate Lump Sum Revenue.

The PCC consumes 7% of the potable water produced by the Mt. Hope and Miraflores plants. The Mt. Hope plant can be expanded by roughly 40% to 37 million gallons per day to service the growing needs of communities on the Atlantic side. The PCC has the option of expanding the plant and selling the additional production or divesting the plant without the incremental investment and pocketing the proceeds free and clear.

Strategic Opportunity 5: Summary Evaluation

Revenue/ Profitability	Expansion of the water plant could yield approximately $2 million in additional annual revenues based on current water "rates". Conservatively capitalizing the total revenues realized from both plants might place a sale value on the plants ranging from $10-20 million.	PCC Readiness	The PCC is positioned to spin off its water plant.
Investment Required	To be determined.	Fit w/GOP Initiatives	Highly likely; consistent with GOP efforts to privatize and support economic development on the Atlantic side.
Risk Profile	Limited risk is expected with either the expansion or asset sale alternative.	Systemic Effects	None anticipated.
Competition	This is perceived as a perishable opportunity, viable until IDAAN makes commitments for alternative water capacity.	Other Issues	
Timing	Immediate.		

Strategic Opportunity 6: Offer Industrial and Maritime Training Programs Outside the PCC.

The pilot training by the Canal is perceived to be on par with the best in the world. This is due to both the quality of the classroom instruction including the simulator and the hands on training received, combined with some of the most difficult piloting conditions to be encountered anywhere in the world. The PCC already offers maritime training to some non-PCC personnel; this opportunity represents an aggressive commitment to train worldwide maritime personnel.

Similarly the industrial training facility has available capacity, the reputation, and ability to offer training services for a fee to non-PCC audiences. As Panama continues to pursue an integrated maritime, economic development, and privatization strategy, it is likely that the demand for well skilled craft and trade will increase. Having an indigenous training capability, of a quality equal to training programs in the US, would be of great value.

Strategic Opportunity 6: Summary Evaluation

Revenue/ Profitability	Preliminary estimates for maritime training suggest an addressable market of some $500K-$1 million based on available capacity. Similar estimates for industrial training suggest a $10 million annual opportunity.	PCC Readiness	Both the industrial and maritime training groups appear ready and eager to explore the potential for this opportunity.
Investment Required	For both cases, the principal investment needed would be the development of marketing and administrative systems necessary to attract and manage attendees.	Fit w/GOP Initiatives	Likely fit. Once a comprehensive Maritime strategy is detailed, the maritime training could be a notable component or contributor.
Risk Profile	Limited risk as incremental investment is expected to be small and PCC has marketable advantage.	Systemic Effects	None.
Competition	Competition will and does exist for both options, but it is expected to be within acceptable limits.	Other Issues	
Timing	The opportunity exists today, and is not expected to be perishable.		

<u>Strategic Opportunity 7: Leverage the New VTMS System to Provide a Platform for Developing a Vessel Traffic Information System and Value Added Service to Ships in Ports, Anchorages, and Transiting Canal.</u>

The Canal is currently in the process of developing a new Vessel Traffic Management System (VTMS) to facilitate the efficient movement and scheduling of ships through the canal. Additional value added services can be offered through the development of enhanced system capabilities to provide information and communication services to vessels and maritime operators in Panamanian waterways and ports. At present, the PCC operates the only Vessel Traffic Information System (VTIS) in Panama, creating a market opportunity to serve the ports and harbors activity on both the Atlantic and Pacific. A VTIS service could be offered to and used by virtually every vessel entering Panamanian ports and harbors.

There is a wide and growing variety of services and information that could be offered, including but not limited to the following:

- Vessel advance arrival report
- Weather and water conditions report
- Traffic conditions -- existing and projected

- Vessel Description reports
- Cellular phone
- Other Harbor and Port status

Additionally, if Panama is successful in further developing the harbors on both coasts and linking them with other transport modes such as an improved freight facility or a cross isthmus link, the PCC could provide a comprehensive intermodal logistics management and information service.

Strategic Opportunity 7: Summary Evaluation

Revenue/ Profitability	Assuming a minimum of $100 per vessel, for only those vessels transiting the canal this would yield minimum revenues of $1.5 million.	PCC Readiness	The planned VTMS would need to be leveraged to provide these services. Marine division recognizes the opportunity and is doing some initial research.
Investment Required	A fully developed VTIS to service ports on both the Pacific and Atlantic will require an investment estimated to on the order of $4.0 million.	Fit w/GOP Initiatives	Strong. A state of the art VTIS and intermodal logistics management system could be a major attribute offered by Panama.
Risk Profile	Given the size of the investment this opportunity should be considered of moderate risk. Growing port and harbor activity combined with quality, customer focused service would significantly mitigate the risk.	Systemic Effects	Significant; will represent another layer of value added services further promoting the use of the Canal. May also serve as a platform for expanding maritime information services
Competition	There is presently no competition for this service, although as Maritime trade increases an alternative provider would likely emerge.	Other Issues	
Timing	Begin development now, with deployment scheduled for 2000.		

Strategic Opportunity 8: Pursue Ship Repair Services, Initially in Partnership with Existing Commercial Repair Facility.

The PCC's ship repair facility in Mt. Hope is used for the repair, maintenance and servicing of PCC craft. The PCC's ship repair facility is considered to be one of the premiere facilities in the region, and the only major machine shop in Panama. The facility runs a 2 x 5 schedule, with a single shift one weekend day. While utilization of the facility during this period is high, additional capacity is available. At the same time, the demand for ship repair services is high. The Braswell facility in Balboa is near capacity with little room for expansion.

Under the Treaties, the ship repair facility is currently prohibited from providing commercial ship repair services. In light of this restriction, the PCC might, for the next few years, confine itself to value-added middleman activities. For example, it could assist in the planning, coordination, and scheduling of topside repair work such as painting, welding, etc. during a vessel's transit through the canal. By completing such repairs during transit, the PCC could charge, through its repair partners, a premium reflecting the time the ship avoids staying in port. This premium could accrue to the PCC.

Having developed relationships with the vessel owners for repairs, as well as with current providers, the PCC would be well positioned to become more actively involved in the repair business post transition.

Strategic Opportunity 8: Summary Evaluation

Revenue/ Profitability	$600,000 average bill per ship, perhaps averaging 8 ships/month on the Atlantic side. Profit margins could be in 20% range.	PCC Readiness	Uncertain; significant cost management effort would likely be required to meet competitive hurdles for full service repair.
Investment Required	Could be significant; floating piers, 1500 feet of fixed piers; 35 ft draft capacity etc.	Fit w/GOP Initiatives	Uncertain. Would require coordination with GOP.
Risk Profile	Moderate to high risk business, partnering with existing repair business would help mitigate competitive risk.	Systemic Effects	Prepare for Post 2000 activities
Competition	Balboa repair facility on Pacific coast. No competition on Atlantic coast as yet, but continued development of port capacity would tend to attract repair facility.	Other Issues	
Timing	Opportunity to facilitate in transit repairs exists presently. Opportunity for commercial repair facility on Atlantic side is perishable. PCC could not implement full repair service until 2000 due to treaty.		

<u>Strategic Opportunity 9: Expand MTD Services.</u>

The Motor Transportation Division maintains a facility and skills that appear to be at least the equal of any in Panama. It has full service capabilities which include the ability and experience to maintain special use vehicles such as buses, ambulances, bucket trucks, forklifts etc. As an initial foray into growth opportunities, MTD is beginning a contract with the General Services Administration (GSA) to service their fleet of approximately 1000 cars at the rate of approximately 300 hrs/month. MTD could take advantage of this relationship to begin developing a commercially focused garage operation. MTD could also try to expand its services to the GSA. A particular challenge to MTD is to develop a highly efficient operation since it pays its mechanics more than what local garages pay mechanics.

Anticipating that there will still be some cost differential between local garages and the MTD, MTD would need to focus its efforts on acquiring customers who operate large fleets and would value the better quality work. Possible customers to consider include:

- IHRIE
- INTEL
- IDAAN
- Breweries
- Police
- Food distributors
- PIXA

Strategic Opportunity 9: Summary Evaluation

Revenue/ Profitability	Will need to be determined	PCC Readiness	High.
Investment Required	Could be nominal, if efficiency gains are identified and implemented to increase both fixed asset and labor capacity.	Fit w/GOP Initiatives	None, unless MTD is privatized post transition.
Risk Profile	Moderate; derived most from price competition. Some political risks may also be encountered from existing providers	Systemic Effects	None
Competition	Most competition will be from existing dealerships; price based competition will be most intensive	Other Issues	
Timing	Can proceed with GSA activity now, and expand relationship as opportunity arises. Commercial work is prohibited until post transition		

<u>Strategic Opportunity 10: Deploy Excess Dredging Capacity for Commercial Purposes.</u>

Upon conclusion of the cut widening program, it is projected that the PCC with have in-house dredging capacity in excess of what its projected needs will be. A number of alternatives are available to the PCC for optimizing the PCC's dredging capacity within a growth scenario:

- Provide dredging services outside of Canal waters
- Divest the excess capacity

- Outsource/privatize the entire dredging capability.

The dredging business is competitive. Profit margins on maintenance dredging are quite low, and increased competition is expected in Latin America in particular. Further, dredging cartels operate in both Europe and Latin America which have effectively restricted non-cartel members from obtaining contracts. While the canal has both the skill and equipment to provide dredging services, it is uncertain whether it can provide these services on a competitive basis given both the nature of competition and the often repeated statement that the Canal comes first. It is certainly possible to determine the Canal's cost function for dredging as a "stand alone" business and from there to determine if and where it can compete for business. What is more problematic is whether the dredging division, in light of the demands placed upon it by the PCC's core business, has the organizational will, capability and commitment to meet the service demands and expectation of non-Canal customers.

The question also arises as to whether continuing to maintain a dredging capability as part of Canal operations represents the highest and best use of these assets in a post transition, post cut widening environment. The Canal could conceivably "spin-off" its dredging capability as an independent business. The Canal Authority could construct any number of different relationships with the new entity extending from having some ownership interest to a priority service contract.

Strategic Opportunity 10: Summary Evaluation

Revenue/ Profitability	Revenue stream would be variable depending on market conditions and PCC ability and willingness to release capacity. Profitability uncertain due to cost and pricing unknowns. Assured revenue opportunity via capacity spin off.	PCC Readiness	PCC has the dredging capability but does not have the market and external customer service discipline. Recognized conflict between PCC "on demand" service and customer commitment. Competitive pricing is uncertain
Investment Required	Capital investment requirements limited;	Fit w/GOP Initiatives	Uncertain. Would require discussion and coordination.
Risk Profile	Measurable competitive risk and performance risk. PCC would also have to resolve risk of loss of capacity to core business. Variable revenues	Systemic Effects	Might present some initial concerns which would dissipate over time.
Competition	Established	Other Issues	
Timing	Continuous market opportunity, but PCC would be delayed in entering market. Could not organize business prior to 2000.		

Category III Opportunities: New Ventures

The third category of commercial growth opportunities comprises entirely new ventures. While these ventures would build upon the platforms of expertise and skills developed in the core-enhancement and core-extension categories, they would represent new lines of business for the canal, involving new activities, new functions, and new products. None of these businesses is currently permitted by Treaty and none could therefore be implemented before 2000. All of them are vitally related to the broad economic development plans of Panama and plans for them would therefore need to be clearly coordinated with the National Maritime Commission, ARI, the National Ports Authority, and other relevant planning entities of the Government of Panama. Indeed, which of these opportunities the PCC pushes will be a major issue in the strategy Panama develops to fulfill its vision of becoming a global transportation hub. At the same time it is necessary for the PCC to provide a point of view on what the future vision of Panama should be, on what the PCC's domain should be, and on what activities can be leveraged from the PCC's assets and capabilities.

Visions for the growth of Panama's future economy build upon Panama's key existing role in international maritime traffic, reflected in its current position as:

- The largest commercial vessel registry in the world
- A major port-of-call for global shipping transiting the canal
- A regional center of container and transshipment facilities
- A transfer point for international shipping crews
- An international banking center.

These visions encompass, in addition to the interoceanic canal:

- Post Panamax ports on the Atlantic and Pacific oceans with berthing and container facilities, provisions for bunkering during anchorage and ship repair facilities
- A north-south and east-west toll road linking the two coasts and strategic Transportation Hub facilities
- A railroad across the isthmus
- A pipeline for transferring liquid products across the isthmus
- Free trade zones adjacent to the ports
- An air freight facility adjacent to the international airport or on the vacated air force bases, linked to the ports by toll road.

In short, these visions cast Panama as a:

- Global/regional transportation hub
- Global/regional maritime center, and a
- Regional tourism center.

The resources of the Panamanian economy are limited to realize all visions simultaneously; therefore a prioritization of goals and objectives will be necessary. Although the policy level debates are clearly the domain of the Government of Panama and its agencies, the PCC should be an integral part of these discussions.

Potential roles for the PCC in this broad commercial vision could be to serve as a:

- Strategic Operator, capitalizing on operations and maintenance, and design, build, and operating skills.

- Central Logistics Command, leveraging complex operational know how and systems technology.

- Financier/Investor, enabling Panama to leverage cash flow from the PCC's market based toll structure and other operations.

- Aggregator/Integrator of Services, serving as the creative idea generator and marketer of innovative, bundled products and services.

The new ventures discussed below are suggestive of the kinds of specific roles the PCC could play in this overall vision. To the extent that the PCC's capabilities and organizational synergies permit it to fulfill some of these roles in a superior fashion to alternative providers, to launch these activities earlier, or to coordinate them better than would otherwise be possible, it will have a strong claim to those roles -- both in its own commercial interest and in the interest of Panama.

Strategic Opportunity 11: Deploy a Variety of PCC Assets and Capabilities to Directly Service and Catalyze Tourism Sector and Sector Development.

The PCC owns a broad variety of assets that can be used as tourism attractions or deployed to help support or catalyze tourism development. Opportunities range from developing or licensing a line of Panama Canal collectors items, to promoting the selective development of the canal banks, to establishing a historical theme center displaying the Hercules or Cascada, to sponsoring or investing in a major film depicting the epic construction history of the Canal.

The PCC could leverage its infrastructure skills and reputation by offering to assist new entrants into the Panamanian tourist industry, such as hotel operators or cruise ship lines, with the construction and/or operation of their infrastructure facilities

The PCC can assume any number of business roles for such a growth opportunity. Clearly the canal would not be in the retail business for PCC paraphernalia and souvenirs, but it could be the licensing entity, requiring "royalties" to be paid for official PCC goods. The PCC could be the operator of a theme center or park, but perhaps would be better suited to provide the land and "exhibits" and retain a concession operator.

Strategic Opportunity 11: Summary Evaluation

Revenue/ Profitability	Revenues from such items as Canal novelties, launch trips, and theme center admission could be material. Return on investment from a successful movie could be significant.	PCC Readiness	This would represent a new thrust for the PCC which would require significant planning and organizational preparation.
Investment Required	Varied.	Fit w/GOP Initiatives	High.
Risk Profile	In-country tourism promotions and initiatives would be mostly low risk, with perhaps one or two, such as launch trips representing more moderate risk. Movie investment would be high risk	Systemic Effects	To be determined.
Competition	Nominal	Other Issues	
Timing	Timing for this could easily correspond to broader GOP efforts and track the transition of the Canal		

<u>Strategic Opportunity 12: Operate and/or Finance the Proposed Cross Isthmus Toll Road.</u>

The GOP has let a concession for the construction and operation of a high speed toll road connecting the Atlantic and Pacific coasts of Panama. This road, while serving the internal needs of Panama, will also become a potential link in the maritime shipping value chain and potentially a threat to canal traffic if Panamanian activity as a transshipment center increases and shippers use the proposed "land bridge" to move product between oceans. By investing in this project, or by operating it, the PCC would begin to diversity its role in Trans-Isthmian shipping.

Strategic Opportunity 12: Summary Evaluation

Revenue/ Profitability	Significant.	PCC Readiness	PCC would have to develop a new "division" but otherwise the PCC is positioned and generally capable proceeding.
Investment Required	Significant. Investment returns over the long run could exceed anticipated threshold.	Fit w/GOP Initiatives	Potentially High.
Risk Profile	Medium to high in the near term. Lower over the long term.	Systemic Effects	Neutral.
Competition	Represents competition to the Canal. Other competition to the proposal would be the railroad.	Other Issues	
Timing	Investing in the road is likely to be a near to mid term opportunity. As operator, PCC should quickly approach "owners' with expression of interest. Actual operations would be required in the mid to long term.		

Strategic Opportunity 13: Develop Strategic Alliances or Partnerships to Package and Deliver Bundles of Marine Services Consistent with and Complementary to the PCC's Core Transit Service.

The 24 hour canal waters time presents an opportunity to provide additional services to vessels. Providing these vessels, during that time, other services or products that would otherwise require an additional port of call or additional time in port would be a valued service and would enhance the customer utility and value of the Canal passage. Such services could include bunkering, provisioning, minor repairs, spare parts replacement, training, inspections, medical services, etc. While some of these services might be economically justified for the Canal to provide itself, the PCC might be better suited to the role of procuring, scheduling, and administering the provision of such services for a fee. The PCC could serve as a central services entity for maritime services for ships in canal waters for transit. As a central service agent the PCC would be able to source and ensure the best quality service and product and, with the potential economies of scale, offer such services on a highly cost competitive basis, possibly at prices that would be less than what the vessel could contract for directly.

Strategic Opportunity 13: Summary Evaluation

Revenue/ Profitability	Using the PCC's existing administrative system this should be a high margin business with the PCC taking anywhere from a 5-20% fee depending on the size and uniqueness of the transaction.	PCC Readiness	The PCC likely has all the necessary functional elements for putting a central maritime service entity together. The appropriate design and staffing of the organization will be more problematic.
Investment Required	Some investment will be required to establish the systems and relationships, but it is not expected to require a major financial commitment	Fit w/GOP Initiatives	Very positive in that it further enhances the notion an value of Panama as a maritime center.
Risk Profile	Low financial risk, notable success would attract competitors	Systemic Effects	Offers outstanding opportunity to develop new product/service notions to bundle with a canal transit.
Competition	None	Other Issues	
Timing	Favorable.		

CHAPTER FOUR: A PLANNING STRATEGY

If the PCC chooses to take the next step in planning for the kinds of opportunities discussed in Chapter Three, it will need a strategy for doing so that takes into account not only the commercial merits of these opportunities but also the particular challenges the PCC faces over the next several years:

- The paramount demands of the transition
- The need for dialogue with Panama over the post-1999 role of the PCC
- The need for cultural transformation within the PCC if it is to become an aggressive commercial entity
- The substantial restrictions on PCC activities imposed today by the Treaty and U.S. law, and perhaps in the future by Panamanian law. Growth plans which run afoul of any of these realities will be self-defeating.

It's useful, then, to review the bidding:

- The commercial logic of the PCC's growth opportunities suggests a stage-by-stage approach, beginning with core enhancement and moving thereafter to core extension and new ventures.
- Most of the strategic opportunities identified are clearly forbidden to the PCC until at least the end of 1999. Planning, however, is not forbidden.
- Some of the strategic opportunities have greater impact on Panamanian aspirations than others. The greater the impact, the more important it will be to involve relevant Panamanian constituencies as well as the Panamanian government in the planning.
- Planning for growth must not interfere with planning for the transition. To the extent that it can facilitate such planning, all the better.
- Some of the strategic opportunities are better ideas than others.

Arraying the strategic opportunities identified according to their commercial sequence and their legal permissibility yields the following picture. Opportunities with obvious high impact on Panama are in bold type.

	Core Enhancement	Core Extension	New Ventures
Uncertain permissibility even post- 1999			11, 12, 13
Probably permitted, but only post- 1999	1	6, 7, 8, 9, 10	
Probably permitted pre- 1999	2	3, 4, 5, 8(?)	

In order to permit consideration of these and similar opportunities in a way that does not interfere with the ongoing operational and transitional responsibilities of the PCC, it would be advisable to establish a separate Business Development Planning Group. This "Red Team" group would be responsible for the planning of growth initiatives. Ongoing operations and transition matters would be left with the existing PCC departments - - the "Blue Team." Blue Team members would not be distracted from their objectives by the Red Team's growth agenda, although the groups would exchange information and ideas as convenient and appropriate.

As the various growth initiatives proceeded, and moved from planning to implementation, the Red Team members would begin actively to engage in the implementation effort jointly with Blue Team members. Responsibility for performance of core enhancement and core extension initiatives would reside with the Blue Team members, with the Red Team members responsible for developing business plans, marketing, and ensuring that the Blue Team members were acquiring the necessary training and skills to meet the challenges of the initiative and to accomplish the relevant commercial objectives. As initiatives approached the full implementation or product launch stage, the Red and Blue Teams would likely merge to form appropriate business units around the product/service offerings, with overall responsibility for the long term planning, marketing, delivery and profitability of the venture. In this way the PCC's growth initiatives, and the PCC's organizational commitment to them, could evolve in pace with the organization's readiness to embrace each new commercial undertaking.

The Red Team could begin immediately and on its own to plan for Strategic Opportunities 2, 3, 4, 5, and perhaps 8. If, based on such planning, the PCC judged that any of these opportunities merited implementing prior to the Transition, it could do so.

The Red Team could also begin immediately and on its own to plan for Opportunities 6, 7, and 10. These, however, could likely not be implemented until after the Transition.

Planning for Opportunities 8, 9, 11, 12, and 13 could begin immediately but should be undertaken only within a framework of PCC-GOP commercial planning, with the understanding that the proper role of the PCC in these commercial initiatives is yet to be decided. If the PCC decides to pursue further planning with regard to any of this set of opportunities, it must assign the highest priority to establishment of such a joint framework. Otherwise its planning efforts will be confined to nothing more than research.

Planning for Opportunity 1 would require special treatment. This is the initiative that has by far the greatest potential both for increased revenue and for controversy. The magnitude of the initiative will demand Panamanian involvement. The fact that it is a core enhancement initiative, however, suggests that the detailed planning involved will need to occur within the Commission, drawing heavily on PCC data and analysis, PCC studies, and PCC consultants. It cannot be implemented under U.S. law prior to the Transition, but the bulk of the planning, and much of the communications effort with affected customers, could be accomplished before then. The timing of such steps would need to be developed with the Government of Panama.

Within this overall planning design, research would need to be conducted that provides reasonably comprehensive assessments of the market opportunity, the investment, the likely cash flow, and the likely risk levels associated with each opportunity. All things being equal, those whose cash flows show the highest risk-adjusted present value should receive priority. Such quantitative judgments, however, would have to be tempered by qualitative assessments of the perishability of opportunities, the synergy with other PCC functions, the readiness of the PCC to undertake them , and the conformity of such initiatives with Panama's economic strategy. These issues would need to be refined beyond the highly preliminary judgments offered in Chapter Three.

By establishing a Red Team which will insulate the remainder of the organization from the distractions of growth planning, by establishing time frames and planning mechanisms appropriate to each opportunity's legal status and impact on the Panama economy, by involving Panama in planning for those initiatives where Panama's input and concurrence is essential, by sequencing the initiatives so as to avoid overreaching the PCC's organizational capabilities, and by carefully exploring the commercial merits of each opportunity, the PCC could push actively in the direction of sound commercial growth without compromising its existing vital commitment to an operationally, financially, and institutionally successful transition.

CHAPTER FIVE: A PROPOSED WORK PLAN

This chapter outlines a proposed approach to Phase II of the PCC's growth strategy study. It is based on the following assumptions:

- The PCC will have the leadership role in the work effort. The success of the effort will depend on the PCC's full participation.

- Certain of the options will have relatively short analysis and planning horizons while others will have substantial timetables. The longer planning horizons will evolve those strategies slated for Post 2000 and involving other Panamanian interest.

- A broad array of individuals and organizations, both public and private, will be engaged in the effort.

The approach is organized into the following four steps:

- Clarify and confirm the domain for the growth strategy.
- Complete Detailed Analysis of Growth Options Culminating in Detailed Business Plans Outlining the Opportunity
- Identify Most Desirable Growth Opportunities and Finalize Detailed Growth Strategy.
- Draft Implementation Plan

Each of these steps is discussed below:

STEP 1: CLARIFY AND CONFIRM THE DOMAIN FOR THE GROWTH STRATEGY.

This important first step is to clearly identify and articulate the business and growth strategy boundaries for the PCC in relation to both legal and institutional constraints. In other words, what the PCC is allowed/not allowed to do before and after 2000 as it relates to a growth strategy. The two issues to be resolved is this step are:

- What are the legal limitations imposed on PCC and its Board with respect to initiating and implementing growth activities before 2000, as prescribed by the treaty, and US and Panamanian law?

- What legal and policy agendas and frameworks will prescribe the sphere of influence of the PCC, its role, and integration with a post-2000 Panamanian economic and maritime program. How does this impact PCC growth strategy choices before and after 2000?

To resolve these issues several initiatives will be needed concentrating on forces internal to the PCC as well as those emanating from external sources. On the internal front it will be necessary to:

- Confirm and clarify the set of activities that the PCC can pursue before 2000, i.e., what is "black and white" from a Treaty or legal standpoint. This should be a firm set of defining boundaries. An example here would be that the PCC is restrained from revising the structure of the posted tolls until Post 2000.

- Identify the limits of the treaty where it may offer the PCC Board the latitude to decide on whether an activity is "allowed". This is the "gray" area and an internal PCC point-of-view needs to be developed for this. A possible gray area issue might be the selling of excess power from the PCC's power plants to IRHIE in Panama on a firm contract basis.

- Begin flushing out a point-of-view on what specific role the PCC should play in a post 2000 Panama. This activity will require an in-depth understanding of the evolving policy debate and dialog within the executive branch and the agencies of the GOP. It will require an assessment of what the natural role of the PCC should be given its assets and skills. It will also require an assessment of what the PCC can do to support other broader initiatives in Panama. A key challenge will be to ensure that the core-transit role of the PCC is not threatened and unrealistic expectations set on how the canal can contribute to the overall economic development of Panama.

On the external front, once PCC reaches its viewpoints, a set of initiatives will be taken to present and discuss PCC's viewpoint with the GOP executive branch and relevant agencies. This will be an ongoing dialog conducted with a view towards defining clarity on what will/ will not fall under PCC's domain post 2000. For the purposes of the growth strategy project, the overall vision and economic strategy for Panama will be most relevant as well as short-term and longer-term priorities including investment resources and limitations.

STEP 2: COMPLETE DETAILED ANALYSIS OF GROWTH OPTIONS CULMINATING IN DETAILED BUSINESS PLANS OUTLINING THE OPPORTUNITY .

A vital component of any strategy development is to have a rigorous and in-depth analysis of each of the growth opportunity. For some of the growth options this task can be concluded within an estimated 6 months, while for others -- the New Venture options in particular involving other vested interests -- the timeframe is expected to run up to 2 years or more. For each of the opportunities presented, a detailed planning approach is presented.

Strategic Opportunity 1: Pursue Value-Based Pricing of Transit Service

Considerable discussion is presented in Chapter 3 about the issues and approach to migrating from a cost based toll structure to a value based pricing scheme. For example, preliminary analysis of the benefits of attracting one additional 100' beam vessel per day in lieu of a vessel with a 30' ft. beam is $60,000 or $22 million annually. This suggests a significant amount of room for developing a pricing strategy to attract such vessels. The economic objective of such a transition is to maximize the value of the Canal, or as otherwise put, pursue a value enhancement regime. Constructing such a regime is relatively straightforward in concept and quite involved in execution. Conceptually, such an effort involves:

- Ascertaining the marginal cost to the Canal of transiting each major type of vessel

- Understanding the preferences and alternative costs of shippers and operators to using the Canal

- Pricing transit rates to recover costs and to capture the maximum amount of consumer surplus that the canal transit creates for its users compared to their next best alternative.

The specific steps required to develop a new, market derived pricing approach include:

- Segment customers into groups with similar characteristics. These segments, for example, may be based on size, commodity value, commodity type, variability/predictability of passage, or route.

- Develop or confirm if available, detailed long term marginal estimates of the costs incurred by the canal for transiting ships within each of the market segments.

- Apply cost model(s) and analyze the true value of Canal services to ocean carriers, shippers, and consignees. Inputs to such a model would include:

    - fixed and variable operating costs by vessel type and size
    - vessel operating patterns
    - voyage cost data such as insurance, crew, labor, capital, etc.
    - relationship between costs and rates
    - alternative routings
    - estimated value of service and reliability
    - demand elasticity factors
    - commodity value and implicit inventory costs

- Design and test pricing strategies reflecting the above

- Delineate structural considerations or constraints that might limit adopting various alternatives
- Pricing approach; posted, negotiated, auction, etc.
- Structure e.g. bundled, tiered, indexed, customized
- Currency denomination
- Protocol, timing, and frequency of adjustments; planned and unplanned.

Strategic Opportunity 2: Redesign Booking and Reservations Scheme

Approaching the redesign of the booking system would entail an effort very similar to the approach described above. Again, the focus would be on the value to the market of a reservation or even guaranteed passage relative to the opportunity cost to the PCC across different seasonal and operational conditions. Consideration would also be given to whatever costs the PCC incurs for "ensuring" the capacity and administering to the reservation system. Options for enhancing the revenue contribution include examining:

- Increasing the number of booking slots
- Guaranteeing a transit regardless of Canal conditions excepting for safety and disaster situations
- Seasonal pricing
- Options

Strategy Opportunity 3: Develop Additional 100mW Power Generation Capacity and Restructure Existing Power Sales to IHRIE

To evaluate the attractiveness of power production the PCC needs to determine the value of additional capacity to IHRIE and to assess whether or not PCC can build, operate, or joint venture generation assets at a cost that provides attractive opportunities to sell both capacity and energy to IHRIE. The following steps outline the types of analyses that need to be undertaken:

- Develop an improved understanding of the current and future electric requirements of IHRIE. Review load forecasts and dispatch schedules if such are available to determine the need for additional capacity and energy, as well as the likely marginal costs of meeting these energy needs. This analysis will be used to confirm the amount of additional capacity that IHRIE is likely to need and the marginal generating unit with which additional capacity and/or energy would compete.

- Evaluate relative project economics of adding this additional capacity. Among the options available are refurbishment of existing plants to increase efficiency, upgrading capacity of current units, and adding units of various sizes.

- Evaluate pricing options. Current excess energy is sold at a "spot" price. However, power that is committed, particularly at times of system peak has significantly greater value. The options for selling some or all of the available capacity under contract and the remainder under a variety of short term or spot arrangements needs to be explored to maximize the value of such sales to PCC, consistent with their own operating needs.

- Evaluate ownership options. The PCC needs to evaluate whether or not ownership of electric generation assets is consistent with its longer term business vision. It may decide for example that being in the electric generation business is not consistent with its business vision and sell its current assets to IHRIE or another power producer and buy back the power that it needs. Even if this is the case, the PCC may decide that it is well positioned to be a project developer, building additional capacity and then selling it to IHRIE or a third party. Criteria for evaluating these options would include: materiality of the financial returns, synergy with core business, strategic fit, utilization of core competencies, and effect on PCC's image and reputation with its constituencies.

- Develop a business plan to outline the selected options for pursuing electric generation. The plan will integrate the results of the analyses described above into a comprehensive blueprint for action. It will contain an analysis of the addressable market, assessment of competitors strengths and weaknesses, technical evaluation of the generation options, pro forma financial analysis of the selected option based on project economics and market share assumptions, and analysis of market, financial, environmental and other business risks. The plan will also incorporate an analysis of critical success factors, implementation steps and performance measures for the new business.

Strategy Opportunity 4: Sell Chilled Water for Cooling

This analysis is focused on developing a better understanding of the PCC's opportunity to sell the excess chilled water it produces. It focuses on understanding the needs of the market and the options available to the PCC to market excess capacity to maximize its revenues.

- Develop an inventory of potential customers. Beginning with a simple listing of all facilities that are within practical reach of the chilled water system, a refined and prioritized list of potential customers will be developed. The list will consider the need for chilled water (type of business or facility), the load, and the existence and age of current cooling equipment. For example, a hotel with an old chiller approaching replacement age might be a high priority potential customer.

- Determine available capacity. By examining the PCC's own cooling needs and other commitments, determine how much cooling capacity might be available for either firm or interruptable sales.

- Perform competitor analysis. Competition will take the form of on site cooling equipment and other or potential suppliers of chilled water. The competitor analysis will identify such competitors, evaluate their relative strengths and weaknesses, and provide market intelligence as input to development of the marketing strategy.

- Evaluate capacity options. To the extent that sufficient market requirements are identified the PCC should evaluate options to develop and implement a load management program or add additional chillers to its current operations for sale into the retail market. This analysis would be predicated on the availability of space, the synergy with the existing system, including the capacity of the distribution system to handle additional load, and the economics of adding new capacity.

- Conduct pricing study. Market rates for cooled water can be determined by examining the cost of alternatives, including customers installing their own cooling equipment or purchasing chilled water from other potential suppliers.

- Develop marketing strategy. Based on the potential client list, information on available firm and interruptable capacity and the results of the pricing study, a marketing strategy will be developed that maximizes the revenues to PCC from selling chilled water. The strategy will include a description of the various analyses described above, including sizing the potential and addressable markets, describing potential competitors strengths and weaknesses, analyzing the relative economics of alternative expansion plans, projecting cash flow from such expansions based on market size and market share assumptions, describing the positioning strategy, identifying critical success factors for expansion of the chilled water business, and developing of an implementation plan and schedule. An emphasis would also be placed on true cost profile of the chilled water operation.

Strategic Opportunity 5: Expand Water Plant at Mt . Hope to Serve Growing Colon and Cristobal Needs. Alternatively, Divest Production Facilities to Generate Lump Sum Revenue.

This analysis is focused on assessing the optimum growth option for owning, operating the water plants, or divesting those facilities.

- Confirm forecast of water needs. Working with IDAAN sources, including demographic projections of population growth, a forecast for potable water demand will be obtained to ascertain future water requirements. In addition, the future water needs of PCC will be evaluated.

- Evaluate alternative new sources of potable water. Evaluation criteria would include size and potential to expand, proximity to markets and future growth, costs and pricing, timing, and expected quality.

- Assess market value of asset. An evaluation of the market value of the water plants will be conducted by comparing them with other like assets upon which sales information is available, by estimating their replacement costs, and by assessing the value of the revenue stream on a net present value basis. Ultimately the value will be determined by putting the assets into play and evaluating the level of interest and price level of bids but the above procedures will yield an approximation that will be useful to PCC in determining the desirability of selling or holding the asset.

- Develop financial pro forma for continued or expanded operation. Based on the projected future market for water and assumptions regarding market share, costs of operations, and market price levels, a pro forma projection of future revenues will be prepared. This analysis will be used to determine the financial attractiveness of expanding the business, which, in combination with the asset evaluation performed above, will provide PCC management with the information needed to inform a maintain/sell/expand decision.

- Solicit bids. Should the PCC decide that selling is an attractive option, a request for bids package will need to be prepared and potential buyers identified and solicited. A sales plan will be prepared that will target clients who would likely perceive the highest value in the water assets. In addition, a set of bid evaluation criteria will be developed to screen bids in order to select a few for negotiation. A bidders conference or a series of individual meetings will be held with potential bidders.

Strategic Opportunity 6: Offer Industrial and Maritime Training Programs Outside the PCC.

The PCC currently has the know how and facilities to offer training as a commercial enterprise. What is missing is an assessment of the market and the competition for such training. The following approach focuses on such a market assessment.

- Develop an estimate of the size of the potential market. Port facilities around the world have need of well trained pilots. An initial survey of the piloting requirements of these ports will be used to estimate the potential demand for new pilots and for upgraded training for existing pilots. Similarly the PCC's reputation for the quality of its industrial services can attract interest from potential students.

- Evaluate competitors and competitive offerings. To assess the competition for training, an inventory of alternative training programs will be assembled. For each of these programs a description of the features (instructional content and media, length, use of simulator, etc.) of the program and anecdotal information regarding its quality will be assembled. From these materials an assessment of the relative strengths and weaknesses of these programs in comparison to the PCC program will be made and features of the most competitive programs reviewed for possible adoption in the PCC program.

- Conduct market research on customer acceptance of PCC as a trainer. The ability of PCC to attract trainees will be evaluated through market research targeted on current and potential pilots and current and projected demand for industrial crafts. Individuals will be identified through maritime industry groups, harbor authorities and shipping companies. The objective of the research will be to determine how PCC is viewed as a potential trainer, including the level of familiarity with the current program, PCC's reputation as a trainer, and the respondents level of interest in using PCC as a trainer. A secondary objective of this research will be to gather information about the features potential candidates expect or would like to see in a training program.

- Develop marketing strategy. Building on the market sizing and potential client market research, a marketing strategy will be prepared. The strategy will target potential students in those areas where the current and future need seems to be greatest. It will also use the market research information to formulate changes to the training program to make it more attractive to potential trainees. Furthermore, information about those features that were identified as the highest valued by potential trainees will be incorporated into the positioning strategy and promotional materials.

Strategic Opportunity 7: Leverage the New VTMS System to Provide a Platform for Developing a Vessel Traffic Information System and Value Added Service to Ships in Ports, Anchorages, and Transiting Canal.

Given the ever increasing development of comprehensive and uniform VTIS services, we would commit significant time and resources to developing the detailed market and product concept. In particular this would include:

- Identifying, defining, and categorizing the potential population of users of enhanced information services -- information, traffic management, and navigational
    - primary users such as pilots, shipmasters, port authorities
    - secondary users such as tow and salvage, weather, stevedore, suppliers and shipyard organizations
    - tertiary users such as immigration, shipping agents, brokers

- Identify, define, and categorize user requirements of enhanced information services

- Survey the existing VTIS installations worldwide, including plans for expanding or upgrading systems, for example:
    - Fargis
    - Portnet
    - Marine Exchange
    - Singapore
    - Hong Kong
    - Others

- Develop initial service(s)/price/market segment concepts and test for both acceptance and profitability

- Assess technology availability, functionality, and costs

- Revise and refine, develop business plan with entry strategy, ramp up concept, with organization plan, product launch details, timetable and risk and investment analysis.

Strategic Opportunity 8: Pursue Ship Repair Services, Initially in Partnership with Existing Commercial Repair Facility.

With the Engineering and Construction bureau's ship repair facility offering the highest machine shop capability in Panama along with what is also believed to be the most skilled craftsmen and women, the PCC should move as quickly as possible to commercialize as much of this capability as possible. Prohibitions on directly commercializing this capability before the transition suggest the need for some innovative ways of establishing at least a toe hold in the business. As prescribed above, one such option is to establish a strategic partnering or alliance with existing repair ship repair services. One approach to developing this alliance is outlined as follows:

- Review, in detail, the operations, policies, and practices of the repair facilities. This will include examination of the management and conduct of the operation, services available, invested capital, resource capacity, specialized skills and capabilities, O&M costs, and actual overhead and administrative costs. This task will involve reviewing, as available, budgets and related financial reports, craft types and staffing levels, including management and supervisory staff, staff utilization, project reports, and any customer feedback reports, capital improvement plans, and short and long term work plans.

- Assess and evaluate market opportunities. Examine the magnitude and type of repair services in demand on both coasts, which ones appear to be most profitable, level of satisfaction with current providers, and factors influencing the demand for such services. Of particular importance will be interviews with internal customers of the Industrial Division to assess their perception of the quality and efficiency of the delivered service. More specifically, the individual steps in this task will include:

    - Delineate customer needs and decision factors for services
    - Identify prospective users of repair services
    - Develop market segmentation scheme that isolates prospects by key attributes
    - Size markets
    - Clarify dynamic factors influencing market segments and decisions to buy and use services

- Asses and evaluate existing ship repair providers. The objective of this task is to identify the providers, how they define, differentiate, and price their services, their strengths and weaknesses, and business, financing and organizational structures. A combination of person to person interviews, customer interviews, and peer interviews would be used along with articles or reports in the public domain.

- Develop a point of view of what the most attractive markets are, combined with a decision as to who would be the preferred partner with whom to pursue the market. Prepare a business proposition outlining the opportunity, roles, and rational for jointly pursuing the market. In developing this proposition, careful attention must be paid to the nature of the business relationship and defining both a legitimate short term role for the PCC along with a longer term vision of how the PCC may evolve and participate after the transition.

Strategic Opportunity 9: Expand MTD Services.

- Review, in detail, the operations, policies, and practices of the repair facilities. This will include examination of the management and conduct of the operation, services available, invested capital, resource capacity, specialized skills and capabilities, O&M costs, and actual overhead and administrative costs. This task will involve reviewing, as available, budgets and related financial reports, craft types and staffing levels, including management and supervisory staff, staff utilization, project reports, and any customer feedback reports, capital improvement plans, and short and long term work plans.

- Assess and evaluate market opportunities. Identify the major commercial fleets, the type of repair services required, current repair practices, level of satisfaction with current providers, and factors influencing the demand for such services. More specifically, the individual steps in this task will include:

    - Delineate customer needs and decision factors for services
    - Identify prospective users of repair services
    - Develop market segmentation scheme that isolates prospects by key attributes
    - Size markets
    - Clarify dynamic factors influencing market segments and decisions to buy and use services

- Asses and evaluate existing competing fleet maintenance and repair providers. The objective of this task is to identify the providers, how they define, differentiate, and price their services, their strengths and weaknesses, and business, financing and organizational structures. A combination of person to person interviews, customer interviews, and peer interviews would be used along with articles or reports in the public domain.

- Develop business plan outlining key customer targets, services offered, risks, implementation outline, timetable, entry strategy, organization and management strategy, including compensation and cost management options, and critical success factors.

Strategic Opportunity 10: Deploy Excess Dredging Capacity for Commercial Purposes.

The dredging option should be evaluated by comparing the size and risk of the market opportunity, including any risk to the core service, with economic value created, if any, of divesting some or all of the dredging capacity and relying on dredging contractors. The market analysis will parallel the general approaches previously described, including a risk adjusted discounted cash flow analysis of the opportunity.

The economic value created by the offering dredging service scenario would be compared to the economic value created by the divesting scenario.

Strategic Opportunity 11: Deploy a Variety of PCC Assets and Capabilities to Directly Service and Catalyze Tourism Sector and Sector Development.

This opportunity would be tested as follows:

- Research tourism development strategies and related/supporting businesses that have been successfully implemented across a variety of situations.
- Meet with both GOP interests and private development interests to identify plans, objectives, concerns, and expectations for tourism development.
- Identify obstacles to tourism development.
- Review tourism strategies and related businesses that may address obstacles or support plans
- Identify most attractive opportunities and develop business plans and concepts, including risk and investment scenarios.

Strategic Opportunity 12: Operate and/or Finance of Proposed Cross Isthmus Toll Road.

The proposed toll road presents the potential for both passive and active growth opportunities. In a passive role, the PCC would participate only as an investor. In an active role, it would both invest and participate in the management and operation of the road. Once the investment memorandum for development and construction and permanent financing of this project is finalized by the investment bankers, the offering should be reviewed, its attractiveness as an investment assessed, and possible roles and proposals for the PCC identified. Included in this study would be a detailed review of the proposed operation and management of the toll road with a specific focus on how the PCC might be positioned to add value to the proposal through its involvement in the operations or management or the road.

<u>Strategic Opportunity 13: Develop Strategic Alliances or Partnerships to Package and Deliver Bundles of Marine Services Consistent with and Complementary to the PCC's Core Transit Service.</u>

Assessment of this growth opportunity should concentrate on two issues:

- ♦ What services are or would be valued by vessels "in transit", how large would this market be, and are there suitable purveyors of the services.
- ♦ Can the PCC effectively organize such a business and create value to both the providers and users of the service as a broker or central service agent.

These issues suggest the following tasks:

- Perform opportunity analysis to determine high priority activities to include in central services concept.
- Establish performance, cost, and satisfaction levels for these activities.
- Determine competencies required to meet these standards in a central service context and ability of PCC to maintain such competencies.
- Develop legal and organizational protocols for service delivery
- Test economic model to ensure PCC profitability as intermediary
- Outline organizational mandate necessary for successful delivery of service
    - management commitment
    - customer focus
    - consolidation
    - standardization
    - continuous improvement
    - enabling technology.

STEP 3: IDENTIFY MOST DESIRABLE GROWTH OPPORTUNITIES AND FINALIZE DETAILED GROWTH STRATEGY

In this step the assessment framework outlined in Chapter 3 is filled in on the basis of data developed in the preceding Steps 1, 2, and 3. The PCC would then prioritize and sequence opportunities based upon those assessments.

STEP 4: DRAFT IMPLEMENTATION PLAN

In this final step, the PCC outlines to the extent possible the timetable, sequencing, and critical path relationships inherent in the executing the growth strategy. It will define the people and other resources required throughout the plan's execution. Key milestones and waypoints will be identified to help track progress. The implementation plan, consistent with some of the initiatives, will be an organic document, adjusted and revised as plans and decisions for a post- 2000 "maritime/transportation" Panama are solidified.

APPENDIX
Interview Roster

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Marine Exchange

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Board of Directors
Panama Canal Commission

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Braswell International

Moises Mizrachi
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Joe Reeder
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Bill Hauson
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John Leeper
Leeper, Cambridge & Campbell, Inc.

Linda O'Leary
American Waterways Operators

Herman Van Deursen
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APPENDIX
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James R. Freeman
Staff Engineer, Marine Bureau
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James C. Gibbs
Chief, Computer Operations Division
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Ruben Reyna
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Jaime G. Alvarez Price
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