SOUTHWEST REGIONAL SPACEPORT

EXECUTIVE SUMMARY

VISION

The Southwest Regional Spaceport (SRS) vision is to become the first and leading launch and recovery facility for Reusable Launch Vehicles (RLV). The SRS is envisioned to be the primary RLV spaceport for the North American continent, as well as a regional center for space-related commercial activities (see Figure 1).

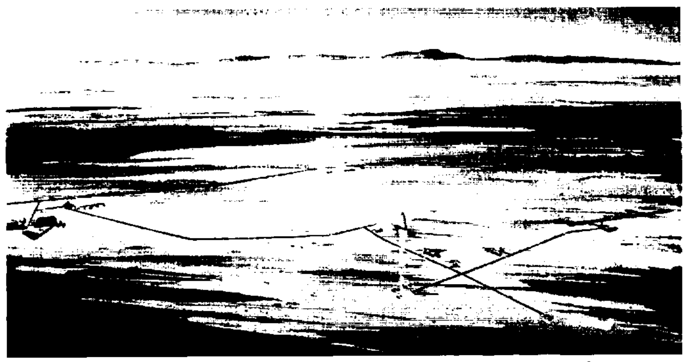


Figure 1: Artist's Rendering of the Southwest Regional Spaceport

MISSION

The mission of the SRS is to provide the land, airspace, and facilities to enable its customers to achieve low cost and efficient access to space and support of space and aircraft-related operations.

BUSINESS DEFINITION

The SRS is envisioned to become a commercial, full-service launch, tracking, and recovery complex with associated runway and support facilities covering 386 square miles (1,000 km^2) on the western border of White Sands Missile Range (WSMR) where the world's first RLV (the DC-X) was flown and tested. It is centered 40 miles (64.4 km) north of Las Cruces, New Mexico (see Figure 2). The SRS is located at a 4,200-foot average elevation on the famed El Camino Real, the oldest vehicular route in North America. Safe, economical, high-volume service will be provided in a dry, clear, high-altitude, low-population, wide-area, inland setting. Down-range sites exist for abort recovery from launch to orbit insertion.

Before RLV operations commence in full, the SRS will seek commercial and government tenants and customers that can use its land, economic, and environmental advantages, technical capabilities, and runway and other facilities for near-term space- and aircraft-related activities, including, but not limited to, manufacturing, testing, maintenance and staging of aircraft and ELV services, airborne law enforcement activities, flight training, and space-related ground control services.

Upon commencement of space flight operations early in the next decade, the SRS's primary customers will be launch companies using RLVs to place satellites into orbits ranging from geosynchronous to low earth orbits at polar and other inclinations. RLVs are defined as those launch vehicles that take off and return as intact vehicles. Unlike Expendable Launch Vehicles (ELV), RLVs do not consume high-cost engines or other components during flight. Currently there are a number of different designs for RLVs. Some RLVs are designed to be air-launched (mounted on top, hung below, or towed behind horizontally from a runway-conventional aircraft), while others are ground-launched either vertically from a launch pad or horizontally from a runway. Some RLVs are designed to land horizontally on a runway, and others are designed to land vertically on a landing pad.

Not all RLVs will be designed to go into orbit. Eventually, transport companies will use suborbital RLVs to carry packages or passengers between any two points on the earth in less than 45 minutes. These companies may also be attracted to the SRS as a location for one of their operational hubs.

The common denominator of all RLVs is that they will be designed as highly reliable, reusable vehicles with rapid turnaround between flights. Their high reliability will be directly responsible for dramatically reducing space launch costs. The SRS is being designed to accommodate every type of RLV.

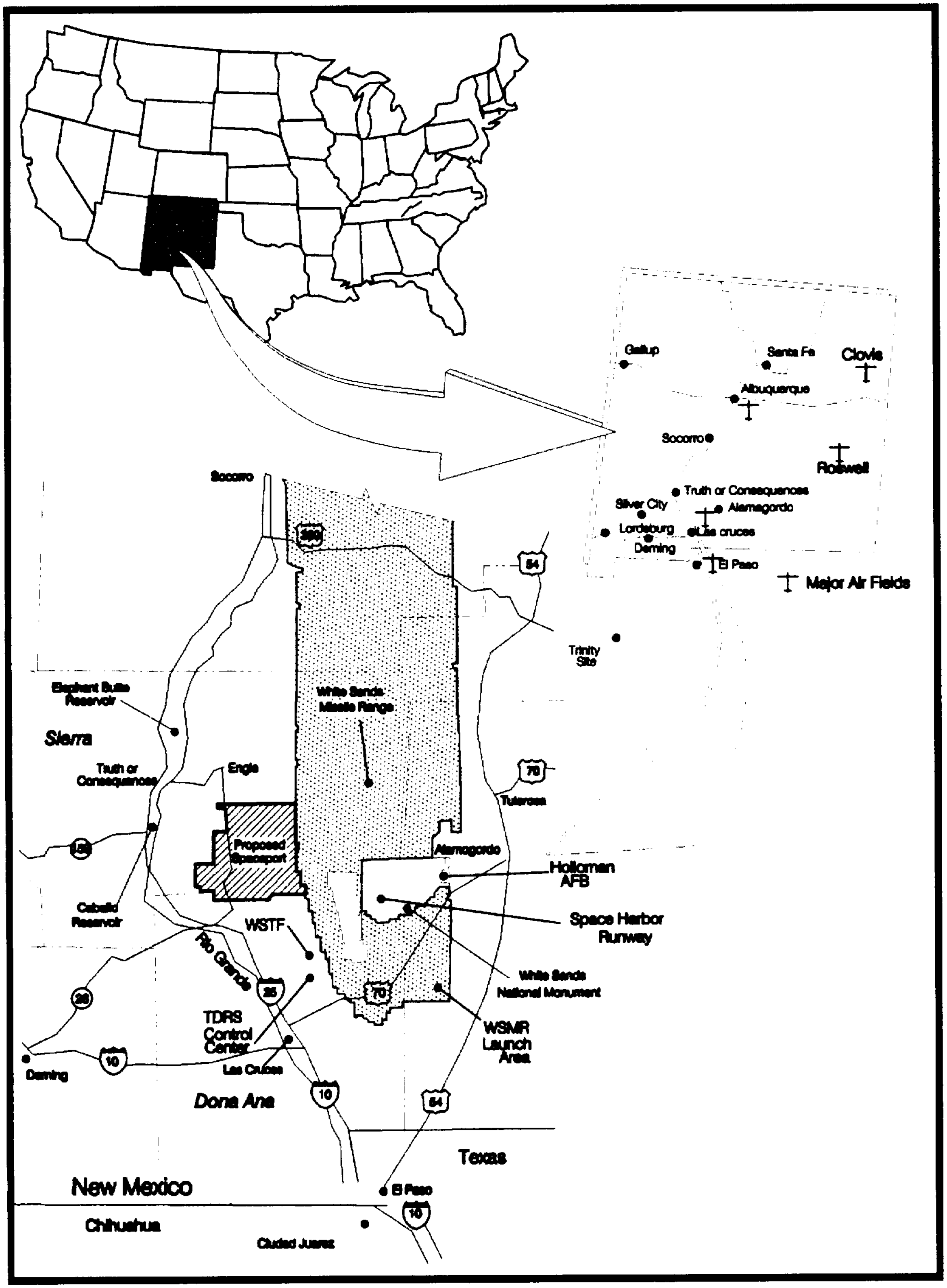


Figure 2: Spaceport Regional Location Map

COMPETITIVE ADVANTAGES

The SRS location in New Mexico is ideal for launching RLVs. The following list, which includes input from all the major RLV developers, both in private industry and government, provides some of the site's advantages:

- Remote but easily accessible location
- Inland site at 4,200-foot average elevation
- Optimal weather conditions
- Down-range abort recovery sites
- Controlled airspace
- Pending completion of Environmental Impact Statement (EIS)
- Pending RLV site license from Federal Aviation Administration (FAA)
- Design specifically for RLVs
- New Mexico tradition of support in advanced technology development and operations
- Nearby higher education facilities with engineering and science traditions
- Availability of tracking, telemetry, communications, and range safety resources at WSMR
- Launch to all desirable orbital inclinations

As a spaceport designed strictly to serve RLVs, its inland location provides critical abort sites required of any RLV design. Figure 3 shows the many potential down-range abort sites the SRS will provide its RLV customers.

The SRS is being planned and designed to foster and impact three key points:

- A dramatic increase in commercial space activity
- Low-cost access to space
- RLVs are key to low-cost access

Near-term space- and aircraft-related applications, however, will be developed as appropriate and feasible in order to generate revenue for the SRS prior to the commencement of RLV launch and recovery activities.

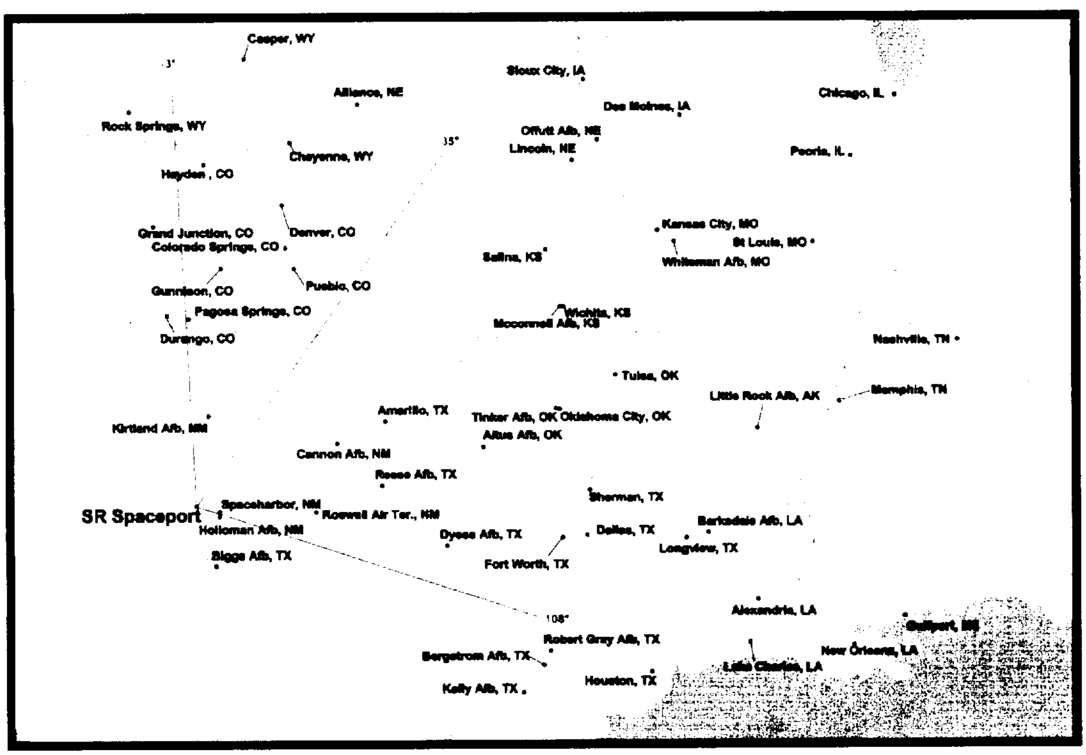


Figure 3: Down-range Abort Sites

BUSINESS APPROACH

Customers that launch ground-based and air-launched RLVs will be charged competitive fees that reflect the cost and operational advantages of the SRS location. Services and infrastructure provided will depend entirely on customer needs. Emphasis will be placed on safe, low-cost launches that are in keeping with today's industry goals of drastically reduced costs. To maintain SRS costs and launch fees as low as possible, initial infrastructure investments will be minimal; in fact, commercial customers will be encouraged to use their own mobile or WSMR's launch control and operations resources in the early years of SRS operations.

Although the SRS will continue to develop and position itself to be a full service spaceport as demand for RLV services expands, in the near-term, the SRS will market its land, economic and environmental advantages, technical capabilities, and runway and other facilities to potential commercial and government tenants and customers. Near-term activities currently being discussed with potential tenants and customers include space-related manufacturing (e.g., rocket engines, fuels); air-launched ELV basing; air-launched RLV testing; maintenance, storage, and staging of aircraft services; staging of airborne law enforcement activities; flight training; space-related tracking, telemetry, and control (TT&C) services; and space-related command, control and communications (C^3). In order to fully evaluate the potential of near-term applications of the SRS, a focused business plan for such applications will be completed in 1998, dependent on available funds. Figure 4 shows projected activities to take place at the SRS in the near-, mid-, and long-terms.

Near-Term (1997–2002) → **Medium-Term (2002–2007)** → **Long-Term (2007+)**

Near-Term (1997–2002)

- Space-related manufacturing
- Air-launched ELV basing
- Air-launched RLV testing
- Maintenance, storage and staging of aircraft
- Staging of airborne law enforcement activities
- Flight training
- Space-related TT&C
- Space-related C^3

Medium-Term (2002–2007)

- RLV launch services
- Continuation of near-term services

Long-Term (2007+)

- Continued and expanded RLV operations
- High speed freight delivery
- Space tourism
- Space resource recovery

Figure 4: Anticipated SRS Activities in the Near-, Medium-, and Long-Term

MANAGEMENT PLAN AND TEAM STRUCTURE

NEW MEXICO OFFICE OF SPACE COMMERCIALIZATION

The SRS will be managed by the New Mexico Office of Space Commercialization (NMOSC), currently located in Las Cruces, New Mexico. The NMOSC is part of the Economic Development Department for the State of New Mexico and is responsible for managing all efforts to establish the SRS. The Executive Director of the NMOSC provides strategic leadership, and the Program Manager provides day-to-day technical management.

NEW MEXICO SPACEPORT AUTHORITY

Within the next three years, the New Mexico Spaceport Authority (NMSA) will be established as a follow-on organization to the NMOSC. The NMSA will be made up of the SRS Executive Director and Program Manager, NMSA staff, New Mexico business and technical leaders, and industry partner representatives (see Figure 6).

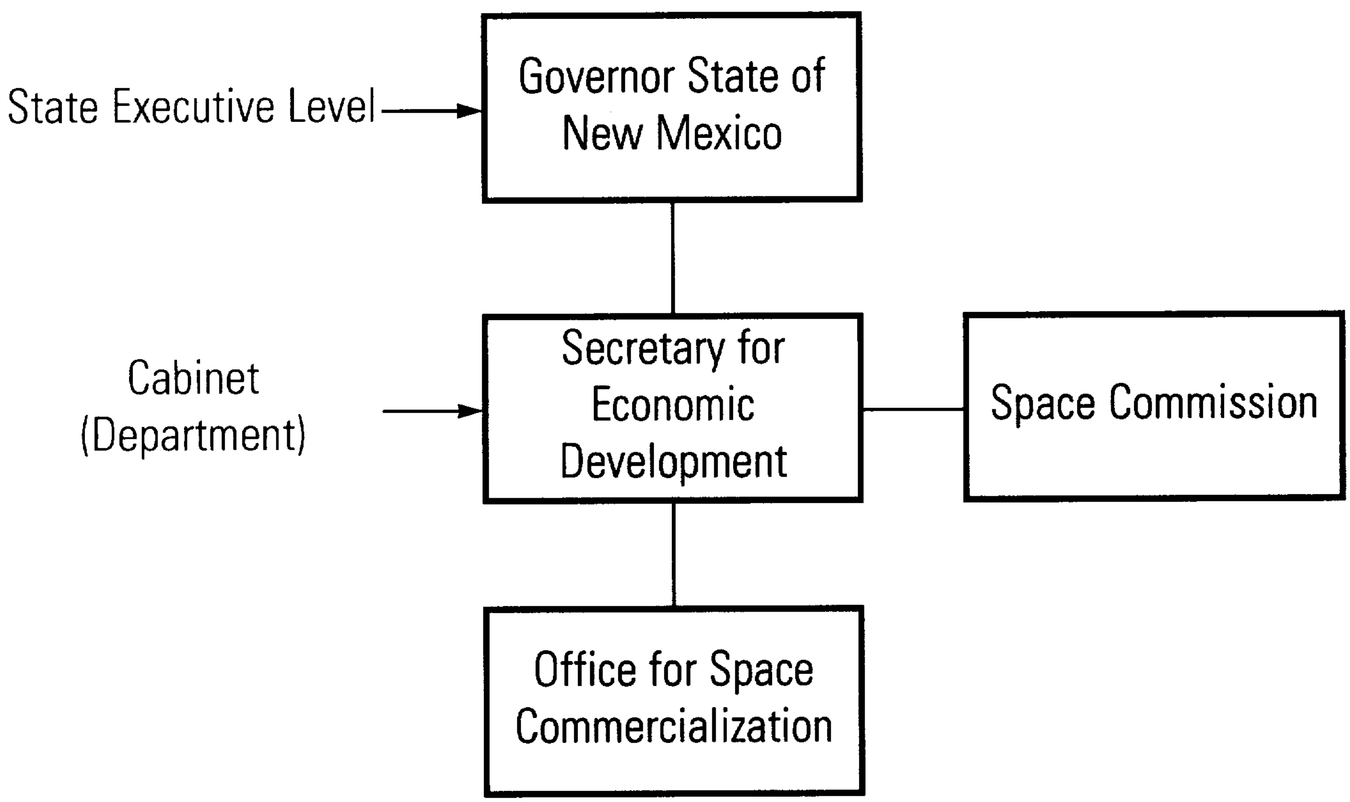


Figure 5: State Executive-Level Organization for the Southwest Regional Spaceport

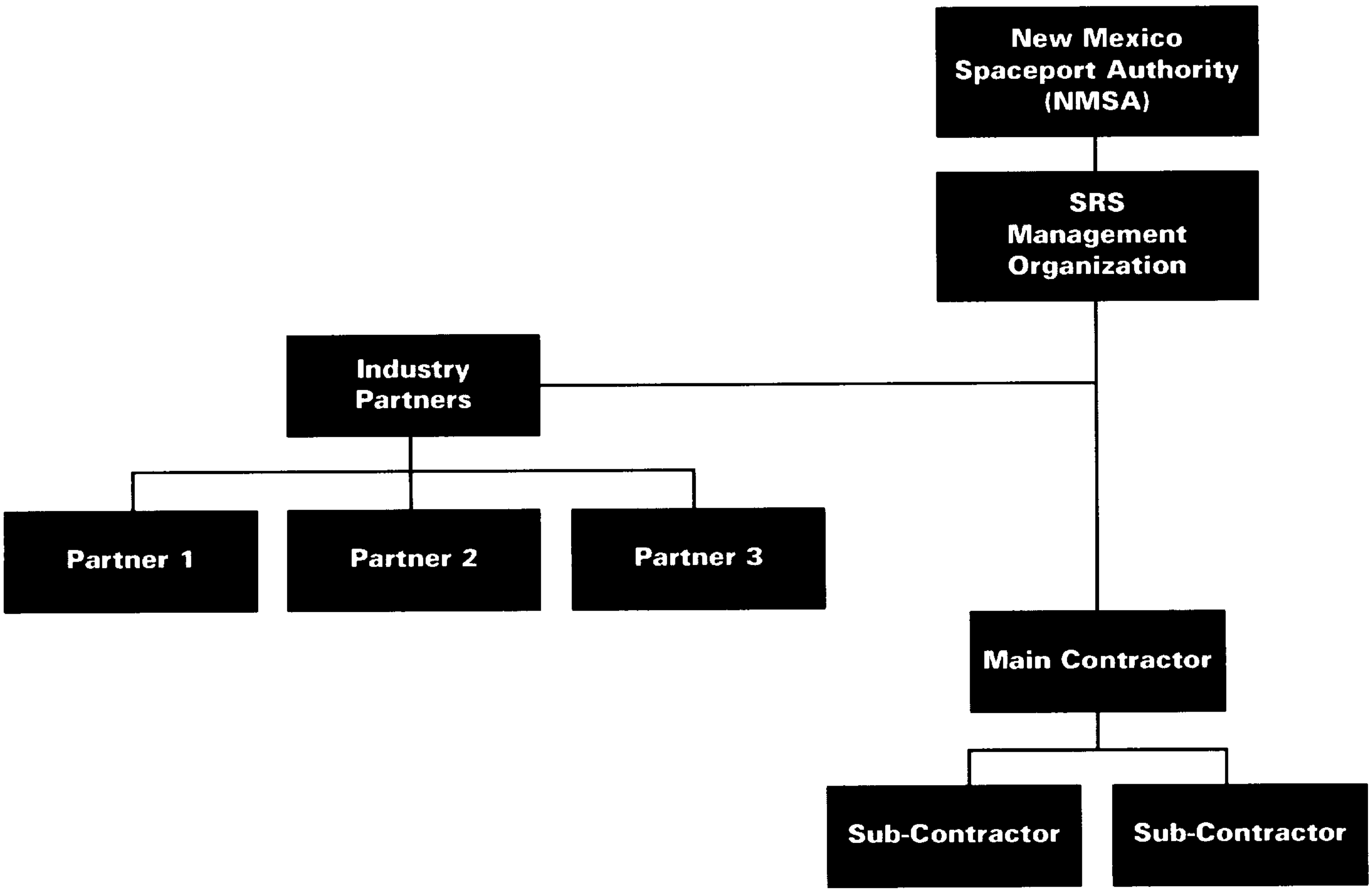


Figure 6: Proposed New Mexico Spaceport Authority Organization

The NMSA responsibilities will include seeking funding for SRS facilities, and approving funding for new projects. The decision-making authority of the NMSA will include both financial implementation and management functions.

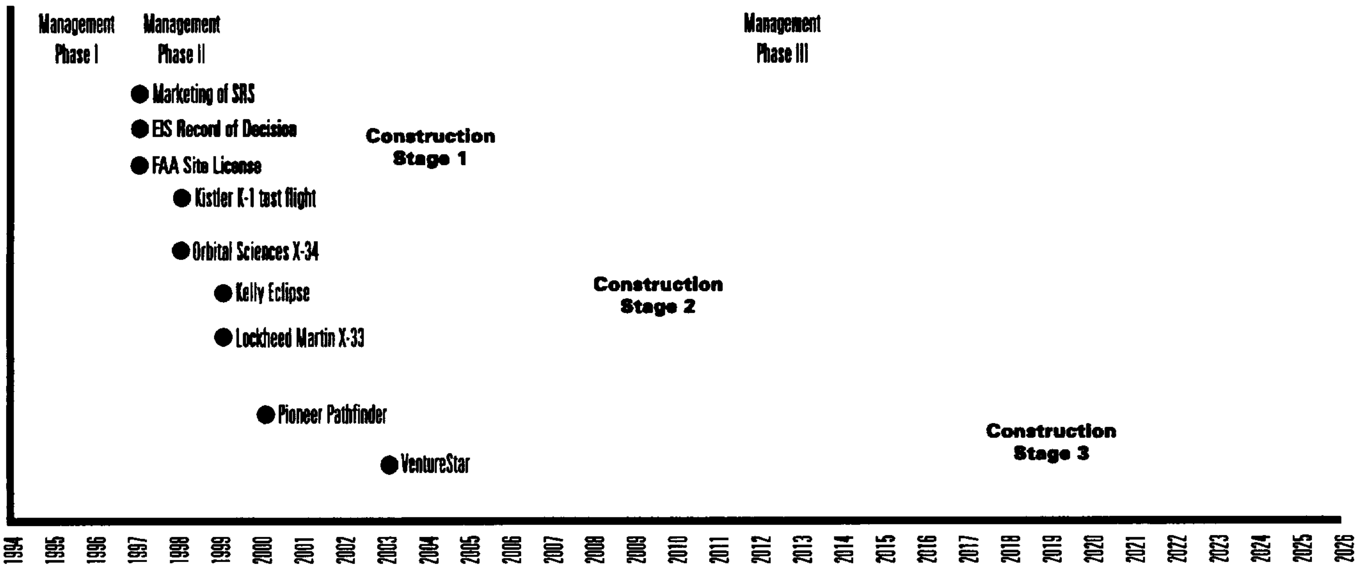


Figure 7: SRS Management Phases/Construction Stages and RLV Launch Dates (Launch Dates Published by Companies)

MANAGEMENT PHASES

The development of the SRS is occurring in three major management phases: Management Phase I is the Planning and Site License Application Phase; Management Phase II is the Licensing, Business Planning, and Pre-Construction Phase; Management Phase III is the Major Infrastructure Construction Phase. The SRS is nearing completion of Management Phase I and has begun Management Phase II.

Figure 7 plots publicly announced launch dates of RLV vehicles currently under development in relation to the SRS development schedule. Additionally, Figure 7 ties the expenditure of resources for SRS facilities and infrastructure to the development and testing of RLV technology, the development of a near-term customer base, identification of user needs and market demand, and the continued refinement of this comprehensive business plan.

CONSTRUCTION STAGES

The construction of SRS facilities will be accomplished during Management Phases II and III. This activity will be divided into three construction stages:

- **STAGE 1 (1999-2007).**
  SRS provides an airfield and minimal launch facilities. SRS customers provide all launch service personnel.

- **STAGE 2 (2008-2011).**
  SRS provides all launch facilities with the exception of cryogenics. SRS customers provide all launch personnel.

- **STAGE 3 (2012-2026).**
  Appropriate to customer needs, SRS provides all launch support including cryogenics, and all launch service personnel.

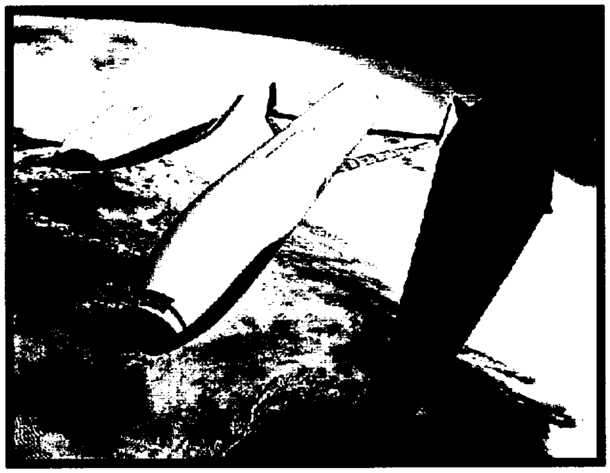
Item	Size	Stages
Airfield	12,000 FT	1
Landing area (as required for vertical return)	**Per customer**	**1**
Explosives storage bunker	300 SF	1
Fire station and site security facility	**2,400 SF**	**1, 2**
Launch stand (as required)	Per customer	1, 2, 3
Manufacturing and support building (w/hangar space at airfield)	**64,000 SF**	**1, 2, 3**
Cryogenic propellant generation, storage, and distribution	Phased construction	1, 3
Warehouse/shop/equipment building	**8,400 SF**	**2**
Spaceport Central Control Facility (SCCF)	10,000 SF	2
Waste handling facilities		**2**
Rail spur and dock	3,300 LF	2
Flight Operation Control Center (FOCC)	**4,000 SF**	**2**
Maintenance & integration building (M&I)	High bay - 14,000 SF	3

Table 1: SRS Facilities and Construction Stages

Table 1 lists major SRS facilities and the construction stage during which each will be constructed.

Based upon current funding schedules for developing and testing of RLV prototypes, the State's Site Development Plan envisions having the necessary environmental approval licenses, facilities, and infrastructure in place to potentially support NASA/Lockheed Martin's RLV certification flights by 2003. For example, it may be possible to combine SRS flight corridors with Holloman Air Force Base runways to provide for Mach 8 flights of the NASA/Orbital X-34 air-launched RLV. This schedule will be further refined as critical components of the phased approach are completed. Other non-governmental sponsored RLV flights will be supported as opportunities warrant.

The SRS plans to begin providing limited launch and recovery services to RLV vehicle developers by 1998 by temporarily incorporating facilities at WSMR, Hollomon AFB, and Roswell Industrial Air Center. Initial operations and service capabilities at the SRS will be provided by 2002 to match the RLV manufacturers' goal of capturing the second "wave" launch market shown in Figure 9. Services associated with runway availability will commence by 2002 or upon runway completion, possibly as early as 2000 dependent on funding. A number of commercial space companies have expressed an interest in locating near or at the SRS as early as 1997.



ANTICIPATED MARKET

The market for SRS services is centered on the growing demand for launching satellites and other spacecraft into low earth orbit (LEO), medium earth orbit (MEO), and geostationary orbit (GEO). The business plan describes and quantifies this traditional launch market, makes a determination of the percentage of launches that will be carried out by RLVs, and finally determines SRS's anticipated market share of the launch market.

TARGETED LAUNCH MARKET

A rise in the demand for launch services is currently being experienced due to a sharp increase in the number of commercial mobile communication satellite systems, earth observation, scientific, and multi-purpose satellites (the traditional launch market), as well as an increase in commercial procurements of launch services by U.S. government agencies starting in the late 1990s (see Figure 8). This demand is expected to be sustained as SRS begins full scale operations starting in 2002 and could increase as new, non-traditional launches are identified. "Non-traditional" refers to new launches to service currently non-existing market niches such as high speed freight delivery and space tourism.

The current supply of launch vehicles are not able to meet the projected demand for launch services and is the impetus behind a number of companies (both ELV and RLV developers) seeking to develop new vehicles. Total launch vehicle revenues, including both commercial and government launches, were $4.9 billion in 1996, and are projected to reach $5.9 billion by the year 2000.

Commercial corporations, as well as military and government agencies, are helping to develop various types of RLVs, including air- and ground-launch systems. An air-launch RLV would take off from a conventional runway, deploy the payload attached to its upper-stage, and return to a runway for horizontal landing. A ground-launch RLV would launch vertically or horizontally, deploy the payload, and re-enter for landing. Depending on the type of ground-launch RLV, landing can occur either vertically or horizontally.

The SRS is positioning itself to become the launch site of choice for RLV companies. With the anticipated development of RLVs and a decrease in the costs required to launch payloads, the satellite market overall should experience substantial growth.

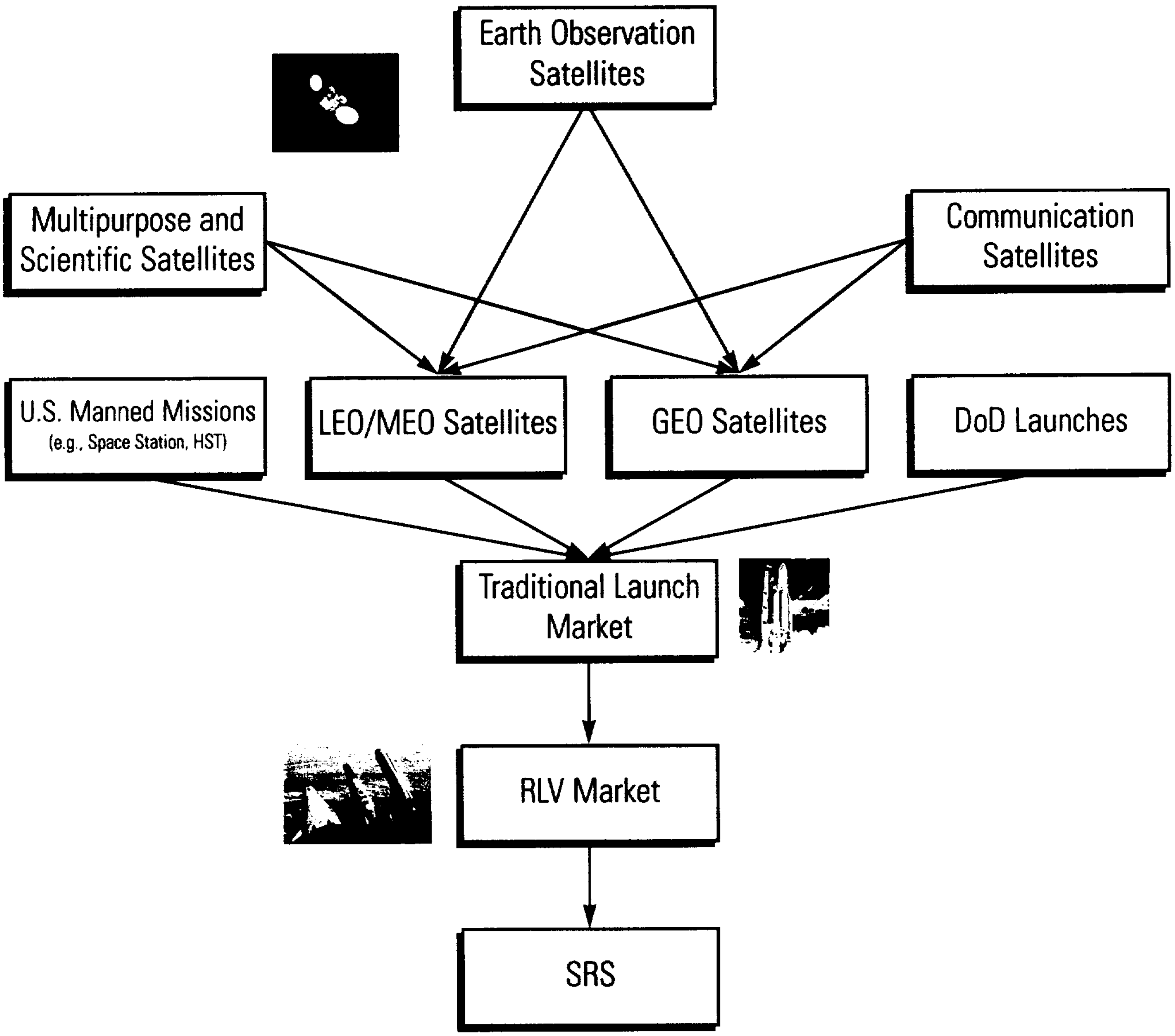


Figure 8: General Methodology for Determining SRS's Market Share

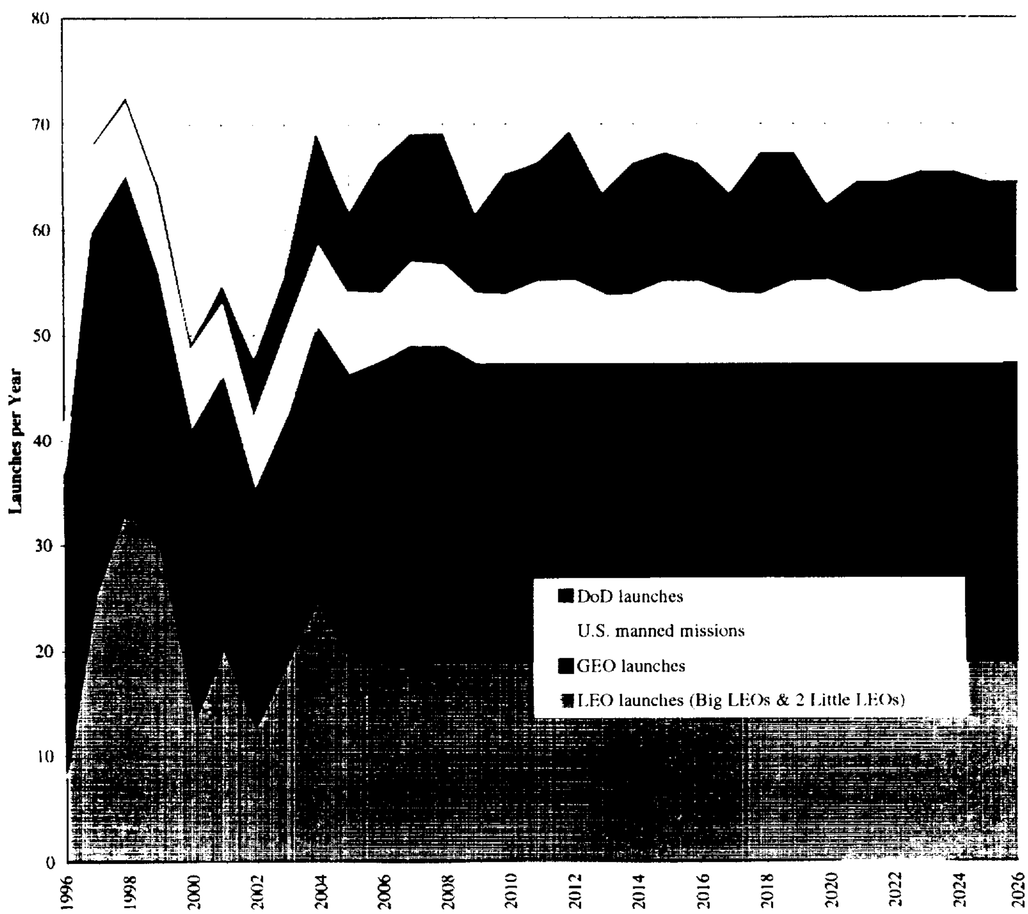


Figure 9: Projected Traditional Launch Market

Sources: Teal Group Corporation, Phillips Business Information, Inc., DOT's OCST and COMSTAC, and KPMG Peat Marwick LLP.

Figure 9 shows the projected traditional launch market for the years 1996 to 2026. This model was used to determine the SRS's expected market share. The model shows a launch peak of approximately 70 launches per year in 1998 primarily due to the first wave of satellites from the proposed LEO communication systems. Thereafter, the number of launches per year decreases as the proposed LEO communication systems complete initial launching of their constellations. Since a majority of the proposed LEO satellites have a life expectancy of five to seven years, a second peak should occur around 2004 when replacement satellites are launched. After 2005, a yearly LEO launch rate is obtained by averaging the annual LEO launch results from 2000 to 2004. GEO satellites should average from 26 to 30 launches per year, equaling approximately half of the traditional launch market.

SPACEPORT OPERATIONS & SERVICES

GENERAL SPACEPORT OPERATIONS PHILOSOPHY

The operating philosophy of the SRS is to provide a federally approved site that encompasses a compatible climate, sufficient land, controlled airspace, appropriate infrastructure, and operational services that allow for safe, minimum-cost RLV operations by users of the SRS. Airport-like operations will be provided to SRS customers to the greatest extent possible.

The SRS will be equipped with the basic facilities to provide all RLV operations (refer back to Table 1). To minimize launch costs, the SRS will be constructed in stages, based on launch demand.

"BARE MINIMUM" OPERATIONS PHILOSOPHY

In order for the spaceport to be successful, and to contribute to its launch customers' success, the SRS must keep the notion of low cost operations as its top priority, while maintaining or exceeding industry standards for safety. For this reason, the SRS is adopting a "bare minimum" philosophy to launch operations during the early years. For example, much of the infrastructure already in place at WSMR may be used on a temporary basis until comparable facilities are built at the SRS.

SRS SERVICES

The selection of services and facilities supplied at the SRS will be entirely customer driven. Potential services offered by the SRS, contractors to the SRS, or private companies are displayed in Table 2.

• Access to FAA-cleared airspace	• Fueling
• Runway for horizontal launch and landing	• Fuel storage
• Regulatory interfaces	• Satellite tracking, control and monitoring
• Office space	• Mobile facility parking and utilities
• Security	• Fire station
• Operations facilities	• Utilities
• Range services	• Generic launch pad
• Space for construction of vehicle-peculiar launch and landing pads	• Land for construction of corporate facilities
• Hangar	• Payload integration
• Operations personnel and services	• Interfaces with state and federal agencies and facilities

Table 2: Potential Services Offered at the Spaceport

FINANCE PLAN

OVERVIEW

The SRS finance plan is built on a public ownership structure that utilizes a staged approach to raising the estimated $344 million (including the $104 million cryogenics plant to be financed separately) needed to construct the spaceport. The business plan covers three topics:

1. Sources of capital available to SRS
2. SRS capital requirements
3. A strategy to meet these capital requirements using funds available to SRS

	Construction Stage 1	Construction Stage 2	Construction Stage 3
Years	1999-2007	2008-2011	2012-2026
Launches per Year	1-6	12-14	19-21
SRS Facilities	Launch Pad Runway Roads (I) Electrical Manufacturing/Support Facility (I) Landing Pad Area Fueling System Aviation and Cryogenics Systems Explosive Storage	Warehouse Communications Water System Liquid Waste Railroad Spaceport Central Control Facility Flight Operation Control Center Fire Station/Security Solid Waste Manufacturing/Support Facility (II) Roads (II) Range Instrumentation (II)	Cryogenics Plant Manufacturing/Support Facility(III) Natural Gas Range Instrumentation(III) Maintenance and Integration (M&I) Facility
SRS Services	Administration/Security	Administration/Security	All launch services
Construction Costs	$163,948,362	$61,473,377	$119,232,889
Operating Expenses (annual)	$2,450,000	$3,250,000	$7,850,000

Table 3: Staged Approach to Financing

As with any large transportation infrastructure project, there are three main sources of capital available to SRS: government grants, debt, and equity. The business plan presents an overview of these sources of capital as well as an analysis of the spaceport's capital requirements. These requirements can be classified under three categories: construction costs, operating and maintenance expenses, and debt service requirements. Note that the financing requirements presented are only those items which cannot be funded by SRS revenues. To meet these capital needs, SRS must use a staged approach with three rounds of financing corresponding to the three stages of construction.

- Construction Stage 1 (1999-2007). During this stage, SRS builds only the minimum facilities needed to support a low volume of launches. SRS is operated as a "bare minimum" facility, with most launch services provided by the launch vehicle operators. Financing is provided through a combination of municipal bonds and government grants.

- Construction Stage 2 (2008-2011). SRS builds all remaining spaceport facilities with the exception of the cryogenics plant and natural gas system. Capital is raised through a second municipal bond issue and continued government support. During Stage 2, private investors may provide capital for construction of additional facilities.

- Construction Stage 3 (2012-2026). SRS completes all construction and provides all launch services through fully-staffed facilities. Financing is provided through government support, special facilities bonds, and/or private funds.

This finance plan was developed after an analysis of financing techniques used by other spaceports as well as by other large transportation infrastructure projects such as airports (Denver International, Washington National, and Dulles International) and a seaport (Los Angeles). In addition, the financing methods of several space industry companies were analyzed. The result is a plan that utilizes a wide array of financing techniques, keeps government grants to a minimum, provides for State oversight and control, leverages private capital, builds in flexibility, and provides the State with a viable exit strategy.

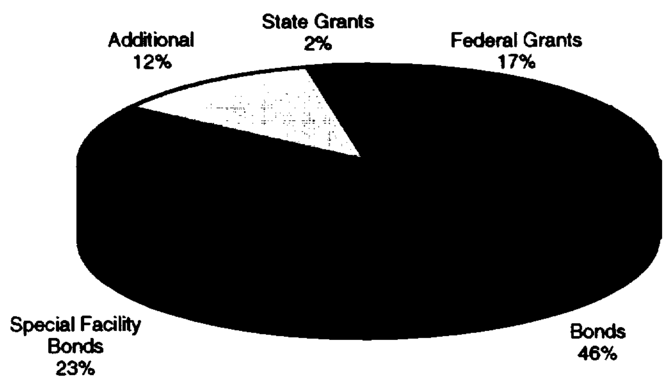


Figure 10: Sources of Capital (Construction Stages 1-3)

The SRS financing plan is built on the public ownership model and uses a staged approach to financing which is critical given the challenges involved in financing this project. Initial financing for Construction Stage 1 will occur in 1999, with follow-on financing for Construction Stage 2 in 2007 and for Construction Stage 3 in 2011. Figures 10 and 11 present an illustration of the total sources and uses of capital through all three financing stages.

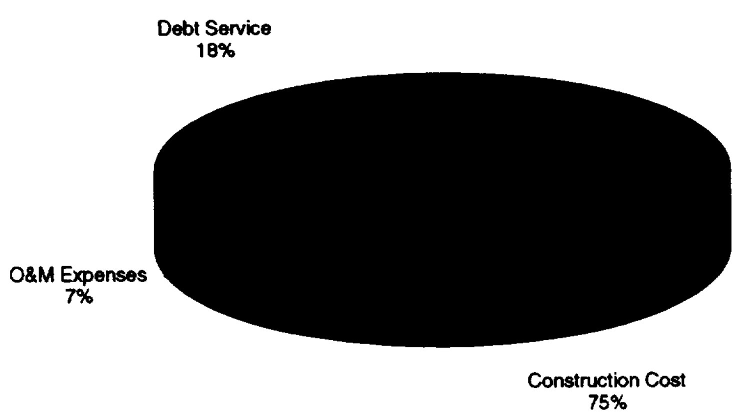


Figure 11: Uses of Funds (Construction Stages 1-3)

PUBLIC OWNERSHIP STRUCTURE

SRS will utilize a public ownership structure that involves the creation of a spaceport authority similar in structure and function to an airport authority. NMSA will be an independent state agency created to provide financing and oversee the operation of the spaceport. NMSA will have the authority to issue bonds, set rates for launch fees and facility leases, and hire contractors.

In anticipation of near-term space- and aircraft-related business, SRS will seek private partners for equity contributions. A separate and investor-oriented business plan for these near-term applications of the SRS will be essential to this financing activity. The SRS will seek long-term equity investment partners as well. These long-term partners can include spaceport contractors, launch vehicle operators, or payload manufacturers with a vested interest in SRS operations and/or pure venture investors interested in the potential equity value of SRS. With the addition of these investors, SRS will assume a public/private joint ownership structure. Though the NMSA will retain majority ownership and control of SRS, the industry partners and investors will be minority share owners of SRS and will have a voice in its management.

OTHER SPACEPORT ANALYSIS

The primary advantages of the SRS over all other proposed spaceports are its optimal climate, its inland site, and its abort recovery opportunities. The business plan reviews other proposed or potential commercial spaceports, SRS's likely competitors, to forecast the number that might compete with SRS for RLV market share. Second, competitive factors differentiating SRS from other spaceports are used to forecast SRS's potential market share.

SRS provides inland, flat, low population density setting with several abort landing sites available and dry, sunny weather. No other commercial spaceport in North America today enjoys this combination of advantages. As a result, SRS would be an excellent starting spaceport for RLV launches before sufficient reliability could be demonstrated for launches over water. Even as competition emerges elsewhere, SRS could leverage its inherent advantages to maintain a significant share of its target market.

The business plan includes an analysis of advantages and disadvantages of other current and planned spaceports. Based on this analysis, SRS's share of the RLV launch market has been forecasted.

BUSINESS STRATEGIES

INTRODUCTION

The SRS has identified business strategies that are key to the spaceport's success. They are important because they distinguish SRS from its competition and they assist SRS management in focusing on future business initiatives. These strategies are:

- Focus on reusable launch vehicles
- Generate near-term revenue and business activity
- Develop interim customer driven operations strategy
- Develop demand-driven development and staged financing strategies
- Apply modern space operations technology
- Develop business partnerships
- Provide a "pro-business" environment
- Become the future hub of high-speed freight delivery and transportation
- Be positioned to become a hub of space tourism and to provide space resource recovery

MARKETING PLAN

The SRS plans to establish the position of Director of Marketing, who will be in charge of attracting business to the SRS. This section segments the SRS customer groups and summarizes how the marketing team will actively pursue this business.

TARGETED CUSTOMERS

Long-term RLV related customers of the SRS can be divided into two categories: RLV developers and tenant organizations. Both will be sources of revenue for the SRS. A third category, service contractors, will provide support services to the SRS and its customers. A fourth category will be those entities that can use the SRS runway and related facilities on a non-interference basis. These customer groups are summarized in Table 4. All of the above customer groups will have the opportunity to be partners of the NMSA by making an equity investment in the SRS. Some of the customer groups can fall under more than one category if they offer multiple products and services. Satellite system developers are indirect customers that could benefit from SRS services. These lists have been generated through research conducted by the NMOSC.

Primary Customers	Potential Tenant Organizations	Potential Service Contractors	Potential Runway Users
• RLV developers and operators* - Boeing North America - Kelly Space and Technology - Kistler - Lockheed Martin - McDonnell Douglas Corporation - Orbital Sciences Corp. - Pioneer Rocketplane - Universal Space Lines - NASA - USAF - International *Representative list of organizations that have expressed interest in the SRS.	• RLV manufacturers • Payload processing • Tracking stations • Data relay and communication • Air Force SMC/TE • Test cell activities	• Operation and maintenance • Cryogenic fuel • Aircraft fuel • Security • Payload processing • Space cargo companies • Utilities • Medical services	• Air cargo companies • USAF • FAA • DEA • INS • National Guard • NASA • Orbital Sciences Corp. • Kelly Space and Technology • Pioneer Rocketplane • Airlines • Aircraft fleet operators • Air museum (for aircraft storage)

Table 4: Target SRS Customer Groups

PROMOTION OF SRS

A marketing team led by the Director of Marketing will be employed by the NMOSC and subsequent SRS management during planning, construction, and operations phases of the SRS. This team's mission will be to promote the SRS and to identify and pursue customers. Initially, the team will consist of up to three full-time marketing specialists who will specialize in areas such as sales/outreach, strategic alliances, and promotions. It is anticipated the team will grow as business at the SRS progresses.

The SRS will develop an outreach campaign targeted toward decision makers in the space industry. A budget appropriate to an effective campaign will be pursued by the NMOSC. The purpose of the outreach campaign will be to raise visibility and educate the space market concerning the SRS and its competitive advantages.

RISK MANAGEMENT

INTRODUCTION

As with any large-scale capital investment required to support future space operations, there are significant risks associated with developing the SRS. The business plan identifies and describes these risks and puts forth a risk mitigation strategy for each. However, this section does not necessarily discuss all the potential risks that could be faced by the SRS and its investors. Therefore, potential investors are urged to undertake their own evaluation of risks inherent in this type of project and to obtain appropriate legal, tax, financial, and investment advice.

Risks that have been evaluated in this plan are government, technology, management, market-demand, social, financial, and competition-related risks.

FINANCIAL ANALYSIS

The overall system cost is $240 million plus $104 million for the cryogenics plant, which is off balance sheet. Capital expenditure is spread over a period of years, based upon the time frame required to build the infrastructure, which is in turn driven by the projected dates for RLV launches.

The preferred method for capital funding for the SRS is through two bond offerings that will mature in 30 years. The first bond offering is issued in 1999 for $103 million with an 8 percent interest rate, and the second bond offering is issued in 2005 for $110 million with a 7 percent interest rate.

CAPITAL EXPENDITURES

The overall system cost of the SRS is $240 million (which does not include the $104 million cryogenics plant to be financed separately). The runway, at over 20 percent of capital expenditures, constitutes the largest expense, followed by the cost of building the roads and buildings at over 15 percent and 11 percent of capital expenditures, respectively. The cryogenics fueling systems, range instrumentation package, and engineering, design and inspection (EDI) follow next, with their costs at over 10 percent, 8 percent, and 7 percent of capital expenditures. The water system, New Mexico gross receipt tax, project management and construction, each constitute less than 7 percent of SRS's capital expenditures. The remaining capital expenses, including electricity, communications, natural gas system, liquid waste, railroad, environmental monitoring, and other miscellaneous costs, total approximately 9 percent. The cryogenics plant will be off-balance sheet financing and is therefore not included as a capital expense.

The capital costs required to build SRS are listed in Table 5. Since SRS plans to have road and runway costs covered by state and federal funds, SRS's capital expenditures which will be covered by the bonds are reduced to approximately $150 million.

CAPITAL EXPENDITURES	COSTS	SOURCE
Roads	$37,133,692	State and federal grants
Electrical	**$6,818,419**	**Operating cash flow**
Communication	$2,981,606	Operating cash flow
Water System	**$16,549,862**	**Operating cash flow**
Natural Gas System	$5,876,642	Operating cash flow
Liquid Waste—Sanitary Sewer	**$161,400**	**Operating cash flow**
Railroad	$369,903	Operating cash flow
Buildings	**$27,780,985**	**Operating cash flow**
Runway	$49,295,167	State and federal grants
Cryogenics Fueling System	**$25,729,741**	**Operating cash flow**
Engineering, Design, & Inspection	$17,636,121	Operating cash flow
Project Management & Construction Management	**$11,420,012**	**Operating cash flow**
Range Instrumentation Package	$20,000,000	Operating cash flow
Other Miscellaneous Costs	**$5,000,000**	**Operating cash flow**
Environmental Monitoring	$1,200,000	Operating cash flow
New Mexico Gross Receipt Tax	**$12,679,916**	**Operating cash flow**
TOTAL CAPITAL EXPENDITURE	**$240,633,466**	

Table 5: SRS's Capital Expenditures

Source: ICF Kaiser Engineers, Inc.

Note: The $104 million cryogenics plant will not be financed by New Mexico bonds, and is therefore not included as a capital expense.

This business plan is an analysis that largely reflects the conclusions of the Governor's Technical Excellence Committee Report, namely an SRS focus on future RLV activity. The plan's primary financial conclusion is that a break-even point for income (revenue less expenses) in SRS, focused on RLV only, may be reached by 2022 (Figure 12). If additional potential near-term revenues, reduced costs, equity investments, state and federal grants, and other funding sources identified in this business plan are realized, this break-even point may improve.

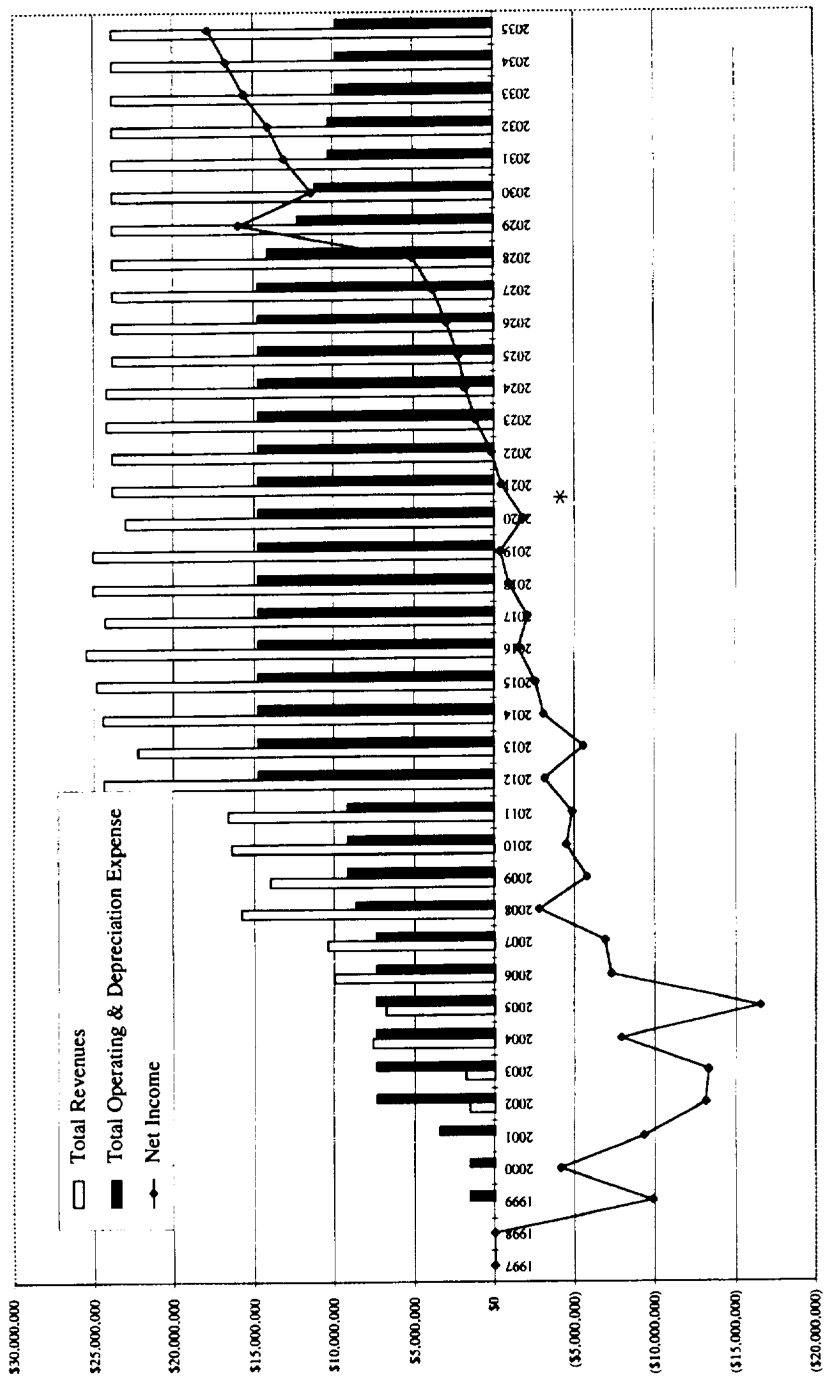


Figure 12: Total Revenues, Total Operating & Depreciation Expense, and Net Income

* Break-even can be positively influenced through early revenues, reduced costs, and/or investment; or negatively influenced by increased costs and/or reduced market penetration.

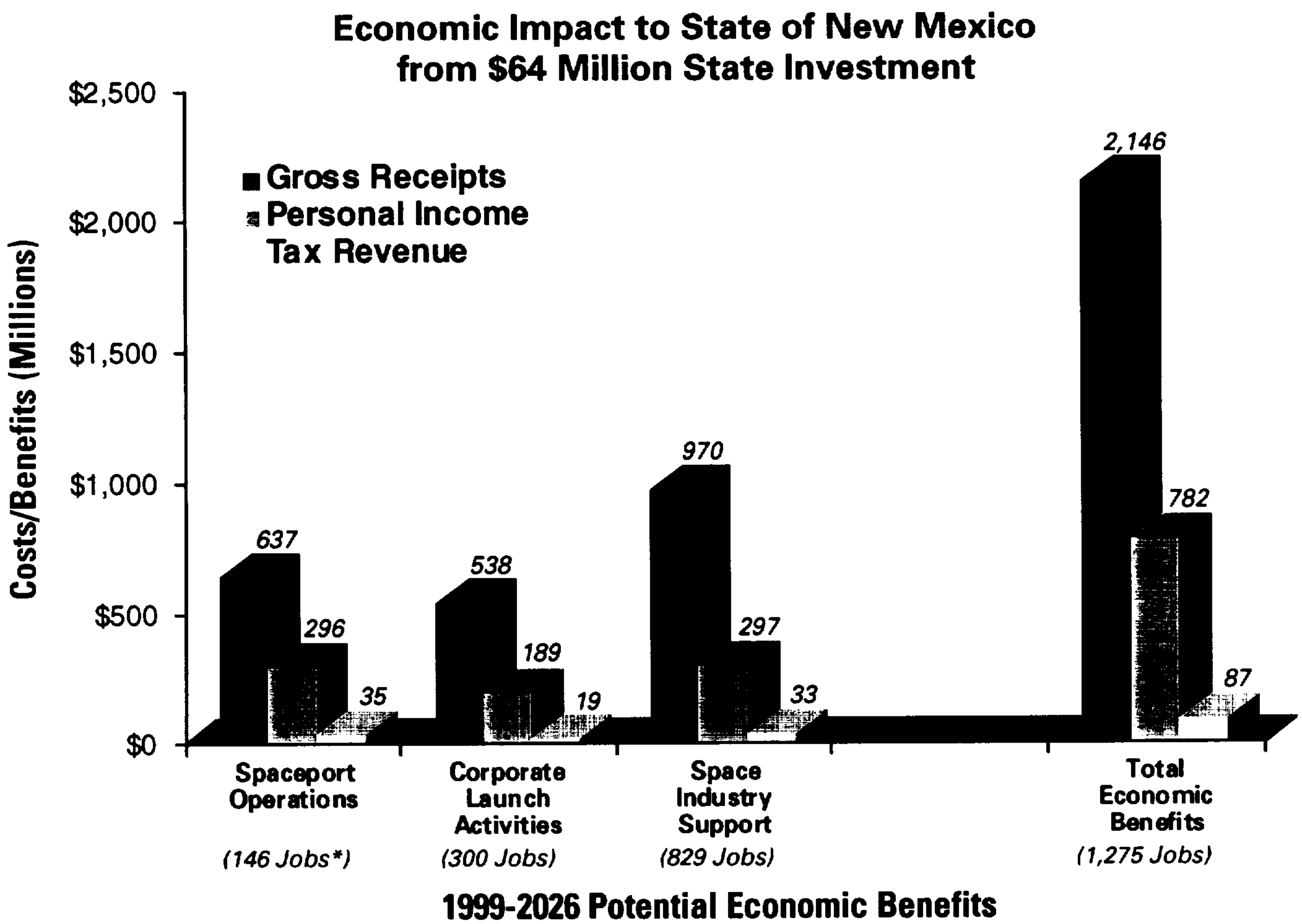


Figure 13: Economic Impact Study

**Does not include 1,692 temporary construction and related jobs peaking in 2014.*

ECONOMIC IMPACT TO THE STATE OF NEW MEXICO

A preliminary economic impact study to examine the potential impact of the SRS on the New Mexico economy is provided in the business plan. This study was conducted by the KPMG Peat Marwick Team, the same group that recently performed the economic impact study of the relocation of Intel into the Albuquerque region. Included in this initial examination are:

- An estimation of the economic impact due to construction and operations of the baseline SRS
- A projection of corporate RLV launch activity surrounding the SRS and its projected economic impact
- A description of potential longer-term economic activities that could result because of the SRS including high-speed freight delivery and space tourism
- A description of potential economic clustering effects resulting from commercial space activities

The potential economic impact of SRS expenditures and activities is extremely positive (Figure 13).

ECONOMIC IMPACT DUE TO THE CONSTRUCTION AND OPERATIONS OF THE SRS

The analysis shows that the project will generate a peak total in the year 2014 of 1,792 new jobs due to construction and operations at the spaceport. In later years, the impact will be 146 in-state total jobs (mainly in the form of spaceport operations). Over the entire study period (1998-2026), the project will generate $637 million in output or sales for New Mexico businesses, and $296 million in personal income in the State. The construction and operations of the SRS will generate total tax revenue of $35 million in tax revenue over the study period, consisting of $7 million in personal income tax, $27 million in Gross Receipts Tax, and $2 million in corporate income tax. These figures do not include estimations of additional economic impact that would result from additional activities such as RLV companies locating near the SRS and such potential long-term activities as high-speed freight delivery and space tourism.

ANALYSIS OF STATE COSTS VERSUS BENEFITS

To summarize, the State's envisioned investment is estimated to be:

Roads	$ 3.7 million
Runway	$ 4.9
Operations & maintenance	$ 56.0
Total Expenditures	**$ 64.6 million**

O&M expenses might also be covered by private investors in SRS or other sources, but are conservatively included here. Additionally, while the State will issue revenue, not general obligation, bonds for which it would not be liable for repayment, its credit reputation may be impacted by the success or failure of NMSA to service this debt from the spaceport's revenues.

Additional dollar impacts are difficult to project at this time. Possible near-term and long-term activities outside SRS's core business, satellite launches by RLVs, fall in this category. Additionally, this study has reviewed the possible attraction of other businesses to the region, not simply as part of the vendor-customer chain rippling from the spaceport, but also as a cluster of similar businesses thriving in a supportive environment; while not quantified here, this potential value should also be considered. Any of these unquantified prospects could make a positive material difference in the spaceport's actual total impact on the State.

The analysis does not consider the impact of alternative uses of public resources or opportunity costs associated with the use of public resources for SRS. Policy makers and citizens should consider public costs and benefits of feasible alternative uses of public funds when drawing normative conclusions involving issues of public spending. In addition, no cost estimates are applied regarding possible environmental costs, or added burdens on the State or local governments, such as additional needs for police or fire protection services, schools, or other infrastructure.

Nevertheless, the exceptional scope and estimated size of the potential economic impacts compared to the State's $64 million investment is positive. At $637 million, the output or sales for New Mexico businesses alone could generate a return on the taxpayers' investment of nearly 10 to 1 over the spaceport's first 30 years. Moreover, this $64 million may be offset by $35 million in tax revenue, creating a net investment of just $29 million that boosts the return ratio to over 20 to 1. If revenues from other near-term or long-term prospects materialize, the ratio could increase even more. Conservative, if speculative, impacts estimated from corporate RLV launch activities and space industry support indicate that total new revenue generated would exceed the $64 million State investment.

On the other hand, if neither ancillary prospects nor core launches (forecasted in the business plan's base case) materialize, then the State government's ability to charter organizations like NMSA capable of issuing revenue bonds could be damaged, thus diminishing not only the spaceport's impacts but also those of the public projects these other issues would support. Sensitivities addressing the possibility of a lower launch volume are evaluated in the business plan's Section 10, "Financial Analysis."

In sum, the spaceport as a public investment merits further serious consideration by the State of New Mexico. As with most new ventures offering innovative services, the State's advantages in supporting a commercial spaceport face a somewhat uncertain market. It is useful to remember, however, that a key driver of any proposed SRS activity's financial or economic success is likely to be the aggressiveness with which that opportunity is pursued with the aid of experienced talent.