

# Chapter One

## Executive Summary





# 1 Executive Summary

## 1.1 The RML Master Plan

The Rocky Mountain Laboratories (RML) is a 33-acre facility located in Hamilton, Montana. It is occupied by the National Institute of Allergy and Infectious Diseases (NIAID), one of the 27 Institutes or Centers of the National Institutes of Health (NIH).

The Master Plan is an integral part of broader, long term planning efforts at the U.S. Department of Health and Human Services (HHS). HHS requires Master Plans for all of its owned campuses as well as those sites and installations occupied by HHS employees that contain at least two independent buildings, or two different activities. One of the plan's primary purposes is to define the physical resources needed to maintain or advance the execution of NIH-wide programs. In addition, it assists in determining and coordinating site improvements and provides guidance for the orderly and comprehensive physical development of NIH campuses to improve their functioning and appearance.

The RML Master Plan seeks to create and maintain a campus environment conducive to accomplishing the NIH, NIAID and RML missions while providing a physical framework for the changing character, nature and urgency of RML's biomedical research programs. It provides a long-range planning envelope for the RML campus, and outlines a strategy for accommodating potential campus development subject to future NIH priorities and the availability of resources. It identifies the physical opportunities and limitations of the campus and projects future staff population and associated facilities for planning purposes. It recognizes, however, that actual program realization at any given time will depend on NIH and HHS priorities, congressional and presidential policy decisions and federal budgetary realities. Although the proposed projects may not be required or carried out to the extent shown in this plan, the Master Plan will help ensure orderly future development of the campus if and as it occurs.

Furthermore, while the Master Plan is a reasonable guideline for future development it does not represent the pre-approval of any individual facilities project nor the particular needs of specific programs to be accommodated on the campus since the financing of such projects and programs must be addressed within the annual HHS budget processes and the HHS Capital Investment Review Board mechanisms.

In accordance with the National Environmental Policy Act of 1969, as amended, (NEPA), federal agencies must use a systematic, interdisciplinary approach that will ensure the integrated use of the natural and social sciences in planning and decision-making activities that may have an impact on the human environment. An environmental document, in this case the Environmental Impact Statement (EIS) which has been prepared to accompany the Master Plan, satisfies this requirement.

NIH is housed on six primary campuses including RML. Although the NIH has prepared Master Plans for its main campus in Bethesda, Maryland and its Animal Center in Poolesville, Maryland, no formal Master Plan, with accompanying NEPA documentation, has been developed for the RML campus. A Site Utilization Study, conducted by Architects Design Group (ADG) of Kalispell, Montana, was completed in 2002 which summarized data collected about the program needs, the regional setting, existing natural resources, and infrastructure. The RML master planning process used this and other information to identify campus needs and develop recommendations and standards for future site development.

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In addition, in June 2005, NIH, with the assistance of RTKL Associates, Inc., developed Campus Development Guidelines for RML. The Guidelines are general standards which, when applied to new RML development projects, produce an organized and unified campus environment. The fundamental elements of the campus are described in the report including its history, the overall campus layout, the distinct neighborhoods within the campus, and site landscaping patterns. These proposed design guidelines further specify provisions for setbacks, parking locations, and acceptable ranges of exterior building materials.

This Master Plan builds upon these previous studies. It updates the programmatic bases and integrates campus-wide planning with current physical security requirements. As noted, the Master Plan has been developed for a 20-year planning horizon, and personnel and space estimates are arranged in four incremental phases covering the 20-year period. At the same time, it is recognized that the Master Plan is a work in progress, for a “living campus”, and the NIH intends to continue to update the plan periodically.

## 1.2 The Missions of the NIH, NIAID and RML

### THE NATIONAL INSTITUTES OF HEALTH

The NIH is the federal government’s focal point for health research and one of the world’s foremost biomedical research institutions.

- The mission of the NIH is to uncover new knowledge that will lead to better health for everyone. NIH seeks to apply that knowledge to extend the health of human lives; and to reduce the burdens resulting from disease and disability. The NIH seeks to accomplish its mission by:
  - fostering fundamental discoveries, innovative research, and their applications in order to advance the nation’s capacity to protect and improve health;
  - developing, maintaining, and renewing the human and physical resources that are vital to ensure the nation’s capability to prevent disease, improve health, and enhance quality of life;
  - expanding the knowledge base in biomedical and associated sciences in order to enhance America's economic well-being and ensure a continued high return on the public investment in research; and
  - exemplifying and promoting the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

In addition to the RML campus in Hamilton, Montana, which is the subject of this Master Plan and associated EIS, the NIH maintains installations in Bethesda, Montgomery County, Maryland (the NIH Main Campus) as well as Poolesville, Baltimore and Frederick, Maryland; Research Triangle Park, North Carolina; and smaller facilities in other parts of the country. The NIH also leases space in over 30 locations in the Bethesda/Rockville area of Montgomery County, and in approximately 10 locations elsewhere.

### NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

The NIAID conducts and supports basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. For more than 50 years, NIAID research has led to new therapies, vaccines, diagnostic tests, and other technologies that have improved the health of millions of people in the United States and around the world. The Institute traces its origins to a small laboratory established in 1887 at the Marine Hospital on Staten Island, N.Y.

In the 1880s, boatloads of immigrants were heading towards America, some of them unknowingly bringing with them cholera and other infectious diseases. The causes of these diseases were not

known. Physicians relied on clinical signs alone to determine whether someone might be carrying an infectious agent.

During this time, Dr. Joseph J. Kinyoun, a young medical officer with the Marine Hospital Service, toured scientific research centers in Europe learning about the new science of bacteriology. Returning home, Dr. Kinyoun set up one of the first bacteriologic laboratories in the United States. Using his microscope and newly acquired medical research techniques, Dr. Kinyoun was able to isolate the cholera organism from arriving passengers in New York. For the first time, American physicians could actually see the organisms causing the disease.

Dr. Kinyoun's Laboratory of Hygiene was renamed the Hygienic Laboratory in 1891 and moved to Washington, D.C., where Congress authorized it to investigate "infectious and contagious diseases and matters pertaining to the public health." The Hygienic Laboratory became the National Institute of Health in 1930 (later renamed to the "National Institutes of Health") and in 1938 relocated to Bethesda, Maryland.

Scientists in NIAID's Division of Intramural Research (DIR), of which RML is a part, conduct laboratory and clinical research covering a wide range of biomedical disciplines related to infectious diseases, immunology, and allergy. Much of the research in DIR involves investigation of the multitude of interacting cells, antibodies, receptors, proteins, and chemicals that compose the immune system.

## **ROCKY MOUNTAIN LABORATORIES**

RML's mission is to play a leading role in the nation's effort to develop diagnostics, vaccines, and therapeutics to combat emerging and re-emerging infectious diseases. The strength of RML programs is in vector-borne transmission of infectious diseases and prion disease research. RML's most significant contributions to the NIAID intramural research program are its unique scientific programs, such as in Transmissible Spongiform Encephalopathy, Lyme Disease, Bubonic Plague, Q Fever and Chlamydia. RML's mission also includes biomedical research regarding the diagnostics, vaccines, immunotherapies, drugs and biologics to prevent and cure diseases associated with the intentional release of agents into civilian populations. To support this mission the RML campus contains secure laboratory facilities and support services.

### **1.3 Planning Methodology**

This Master Plan for the Rocky Mountain Laboratories is one of a set of long range development plans for NIH installations that NIH prepares, then updates on a regular basis, to guide future use and development of its campuses. Each plan outlines a physical framework to support the NIH strategic research plan, the unique needs and character of the site, and the locale in which the installation is located. One of the primary benefits of the NIH master planning process is that it provides a consistent structure for NIH master plans - similar content, methodology, and level of detail. At the same time, the process recognizes differences among NIH campuses - different histories, physical resources, and community contexts - which result in distinctive programmatic requirements and physical forms for each campus.

Development of the RML Master Plan began with the review of relevant information about the mission, organization, personnel, programs and facilities at the RML campus. The most important source of information was the interviews of RML leadership and the research and administrative staff on the campus. Key personnel were asked to base their projections on research needs without considerations of possible limitations on available funding or unanticipated changes in government policies and priorities. Within an interview questionnaire format, laboratory chiefs (1) attempted to predict biomedical research requirements for their respective research unit over the next 20 years, (2) set forth the mission and program development they anticipate would be necessary to meet these requirements, and (3) estimated

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personnel needed to staff these programs over the next five-, ten-, fifteen-, and twenty-year periods.

These projections by RML staff were reviewed by senior RML leadership, NIAID management and the RML Master Plan Steering Committee, groups comprising broader NIH interests. All of these activities were conducted under the oversight and direction of the Division of Facilities Planning (DFP), the organization responsible for master planning within NIH's Office of Research Facilities Development and Operations (ORF).

At each stage of development of the Master Plan, the master planning team coordinated with, and made progress presentations to: NIH and NIAID Management; the RML Master Plan Steering Committee; the Community Liaison Group (CLG), a group representing neighborhood associations and organizations surrounding the RML campus; neighbors of the campus; elected officials; and representatives of Hamilton City and Ravalli County government offices. At the same time, the environmental impacts of growth and change on the campus were investigated, together with various options to mitigate unavoidable impacts. The EIS was developed as part of that process.

### 1.4 Program Basis

This Master Plan is based on data and conditions existing at the close of calendar year 2005, which corresponds closely with the issuance of the Notice of Intent to Prepare an EIS for the RML Master Plan EIS (issued on March 3, 2006). Changes in data and conditions since issuance of the Notice of Intent will be reflected in the next update of the Plan.

In order to develop a framework for this Master Plan, a projection of functional, personnel, and space needs was prepared by means of questionnaires and interviews of personnel at the RML and meetings with officials within NIAID's Office of the Director (OD) Division of Intramural Research (DIR).

Including the projected net increase of 96 staff in the new Integrated Research Facility (IRF), the 2005 total population on the RML campus is 336. Total estimated population at the end of the 20-year planning period is projected to be 427. The primary growth at the campus is anticipated to be through expanded initiatives in existing research programs and associated supporting services. Over the planning period, the number of RML personnel is projected to change as indicated in the following table:

<u>Baseline (2005)</u>	<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 3</u>	<u>Phase 4</u>
336	400	414	422	427

This Master Plan is based, as well, on a number of planning premises and principles, chief among them is accommodating the anticipated scientific needs of RML's biomedical research programs. The Master Plan identifies current and future impacts on building areas, parking and transportation systems, and utilities infrastructure. At the same time, the capacity of the campus for accommodating occupiable space was tempered based on broader community and campus planning goals and objectives. This allows the Master Plan to satisfy its many purposes without compromising the basic tenets on which it is based.

The Master Plan provides a strategy for accommodating the space needs related to these personnel projections, while at the same time satisfying other campus goals and objectives, including decompression of overcrowded office and laboratory space, utility upgrades, and the addition of needed amenities. It is estimated that the space on the RML campus will grow from approximately 309,000 to nearly 432,000 gross square feet, an increase of about 123,000 gross square feet of building area. Most of this growth will be in construction of new research and animal facilities.

### ***RML in the NIH Organization***

The most significant organizational feature of most NIH institutes, including NIAID - for purposes of the Master Plan - is their division into intramural and extramural research functions. The intramural basic and clinical research programs distinguish the NIH as an institution from all others in biomedical research. The NIH intramural research program, unlike grant-funded extramural research, enjoys unique interdisciplinary character, flexibility of the course of research and the freedom to pursue research without imposition of predetermined duration or, in some instances, scope. A key component of the NIAID DIR, RML is perhaps best known for its research into vector-borne diseases, such as Rocky Mountain Spotted Fever, Q Fever and Lyme Disease, three illnesses caused by microbes whose names pay tribute to the former RML scientists who discovered them.

Each of the 27 Institutes and Centers (ICs), including the NIAID, has an Office of the Director (OD) which requires convenient access to the corresponding offices of the other ICs and to the NIH Office of the Director. Accordingly, the NIAID OD and many intramural research facilities, especially those with clinical research needs, are located on the Bethesda, Maryland campus and in other locations in the Metropolitan Washington, D.C. area. Because of its unique history and evolution, RML is located on its own campus in Hamilton, Montana.

Since 1928, when the landmark facility was constructed – and two decades before that when its scientists worked out of makeshift cabins and tents – RML has played a key role in our nation's health and well-being by focusing its talent and resources on the infectious disease threats of the day. One hundred years ago that meant helping overcome the scourge of "black measles" which was striking down settlers in Western Montana's Bitterroot Valley at an alarming rate. Today, it means grappling with the more confounding health issues such as prion diseases and antibiotic-resistant bacteria. Moreover, its proven history in the study of exotic illnesses makes RML eminently positioned to play a central role in conducting research that could help safeguard the public against infectious disease threats, including a possible bioterror attack.

RML is not a clinical facility in which researchers study the effects of experimental drugs, vaccines, and diagnostics on patients and healthy volunteers. Rather, the basic research conducted at RML makes clinical research possible. By focusing on the molecular traits of a given microbe – namely, what the microbe is composed of and how it behaves in its environment – scientists are able to determine the most effective target for fighting that microbe and, from there, develop diagnostics and chemicals that could detect, treat, and generate an immune response against it for further study.

### ***Animals in Research***

The use of animals in research by the intramural programs is extensive at the NIH, which has one of the larger federal veterinary resource programs for research. Animals are accommodated in various ways. Many are currently scattered among buildings on the Bethesda and Poolesville campuses. Some are in leased space near Bethesda. Others are at NIH's Frederick, MD, Baltimore, MD, Hamilton, MT, Research Triangle Park, NC, and other satellite field locations. All NIH facilities are accredited by the American Association for Accreditation of Laboratory Animal Care (AAALAC). RML animals are held at the ABSL2 (Animal Bio-safety Level) and ABSL3 levels, and the ABSL4 level is planned for the IRF. Given the RML research mission, the need for BSL3 and BSL4 containment is greater than at other NIAID research locations. The IRF provides appropriate BSL4 animal provisions for the foreseeable future, but it is estimated the requirement for both BSL2 and BSL3 animal space will continue to increase.

## ***Master Plan Interviews***

### *Campus Amenities*

Interviews of RML personnel revealed concerns about the character of the RML site, but not about the sufficiency of places offering opportunities for socialization and collegiality. In addition, there was a general lack of concern regarding the current availability of facilities for recreation, child care, dining and other services. The general character of the site was considered somewhat industrial by those that responded, noting that its condition detracts from the ambiance and recreational potential of the site.

### *Parking and Transportation*

Of all the RML campus site issues, provision of adequate and convenient on-site parking for all employees and visitors was considered very important. No demand for alternative transit was identified, though it is known that some employees walk or bike to campus.

## **1.5 Planning Objectives**

An academic campus model emerged as the appropriate tool to guide the modernization and modest growth of the NIH on its main campus in Bethesda. However, the application of this same model to the RML campus is less easily accomplished due to the more industrial character of the property as it has evolved. Nevertheless, the benefits of relying on a model in characterizing future campus growth and development are many. For example, it provides a flexible framework for phased construction of independent buildings allowing this to occur in a rational, cost-effective way while maintaining functional relationships and efficient infrastructure and circulation systems. It also provides a conceptual structure for addressing land use and development issues given the site conditions and mission considerations present at a particular location.

Although the NIH is organizationally different from a traditional American academic institution, its campuses share some of the same features of large academic institutions. It has several large self-contained installations spread over large geographic regions and even the country, and these installations are in many respects independent of each other and run their own programs. Nevertheless, they all are organized under the core unit which provides corporate guidance and key services to the individual campuses. Furthermore, programmatically, NIH's campuses are important venues for thoughtful research and study, an essential trait of places of higher learning. Finally, physically, the term "campus" implies an expression of density, scale and quality of environment which is consistent with goals NIH has generally expressed for all of its major installations. The campus model, therefore, has been adopted as the framework for the RML Master Plan. It evokes a clear image to guide future development decisions and is consistent with an overall visual identity that NIH has chosen to advance for its activities.

Due to the extensive level of existing development, the RML campus has certain constraints, but at the same time existing physical site features present opportunities that can be enhanced and incorporated successfully into the Master Plan.

The basic goals of the Master Plan are to provide the framework for:

- An attractive campus whose setting and composition promote collegial interaction and opportunities for informal collaboration and conversation. A flexible framework for development of the campus, one that can adapt to the potential needs of current and future RML and NIAID programs over time
- A campus that affords a secure, supportive, and convenient work environment for RML personnel, with amenities that enhance the quality of life for staff



- Enhanced appearance of the RML campus to complement the surrounding residential community
- Protected and enhanced natural, historic, and scenic resources at RML
- Enhanced communication about NIH goals and policies
- Environmental Sustainability/ Low Impact Development

## **1.6 Description of the Master Plan Concept**

The Master Plan builds on the existing campus and buildings, defers in scale to the neighboring residential neighborhoods, and respects the historic areas within and adjacent to the campus.

### ***Functional Relationships***

The primary concept for relating functions on the campus is to cluster denser research laboratories in the central portion of the campus close to animal facilities. These are then flanked by support activities--administrative and supply support to the north and east and maintenance activities to the west.

### ***Open Space***

A 100' standoff/buffer zone would follow the site perimeter and would be enhanced as a landscaped open space. The Master Plan proposes surface parking at the north perimeter but no new structures within this buffer zone.

In the interior of the campus, the Master Plan proposes a Central Pedestrian Concourse with connections from the Quad and administrative support center to Buildings 13 and 25 and the IRF. This concept is well suited for creating a "campus" atmosphere with spaces and opportunities for random encounters and interaction.

### ***Land Acquisition***

The Master Plan includes the acquisition of adjacent properties to the north and northeast of the existing campus boundaries for the purposes of enhancing campus security and accommodating increased parking demand associated with planned growth. HHS approved funding for purchasing these properties in 2003.

### ***Building Patterns***

All new development is proposed to follow the orthogonal grid pattern established by the layout of existing buildings. This pattern is continued and built on with the placement of new buildings. Advantages of developing the campus on a grid system include ease of integration with existing orthogonal oriented structures, efficiency of land use, economical integration with, and extension of, the utility distribution system and the acknowledgment and further establishment of a clearly defined pattern to guide future growth.

### ***Massing and Heights***

The primary concept for building massing on the RML campus is to concentrate the two tallest structures at the center of the campus, with a transition in height to lower buildings toward the perimeter.

### ***Circulation***

The vehicular circulation concept for the campus is a loop road at the building perimeter, outside the central pedestrian area, with access to surface parking on the one side and primary building entrances on the other. There are two entries to campus, the existing staff and visitor entrance

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from 4<sup>th</sup> Street near Grove Street and the service entrance from 5<sup>th</sup> and Baker Streets. A new vehicle exit is provided at 6<sup>th</sup> Street near the area planned as future expansion. This exit would only be used for campus evacuation during emergencies.

### ***Best Management Practices/Low Impact Development***

All new development would follow Best Management Practices (BMP) and Low Impact Development (LID) strategies. BMPs are defined as “physical, structural and managerial practices that, when used individually or in combination, prevent or reduce pollution of water and attenuate peak flows and volumes.

LID is an alternative, ecologically-sensitive design that mimics the way natural areas store and infiltrate rainwater. The LID approach protects local and regional water quality by decentralizing storm water management and absorbing rainfall throughout the landscape. LID minimizes the amount of impervious surfaces and mitigates the impact of necessary impervious surfaces. There are a variety of conservation practices that work together to mitigate these effects, such as pervious paving, rain gardens, bio-retention cells, bio-swales, native landscaping, and soil quality restoration.



Source Data: Oudens + Knoop Architects, PC

# NIH-RML Master Plan

Hamilton, Montana

- B Veterinary Branch
- C Maintenance
- D Long Term Storage Facility
- E Short Term Storage Facility
- F Generator Expansion/Centralization
- G Research Laboratory
- H Central Stock Room
- J Seminar Room
- K Interpretive Center

- Property Line
- Fence
- Central Pedestrian Concourse

Figure 1.1

# Illustrative 20 year Master Plan

