

Rocky Mountain Laboratories



Environmental Assessment

2015

Draft RML Master Plan Update



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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BMP	Best Management Practices
CO	carbon monoxide
EA	Environmental Assessment
FEIS	Final Environmental Impact Statement
GSF	gross square feet
HHS	Department of Health and Human Services
NIH	National Institutes of Health
NO _x	nitrogen oxides
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
PM ₁₀	Particulate matter less than 10 microns
RML	Rocky Mountain Laboratories
SO _x	sulphur oxides
USC	United States Code
VOC	Volatile organic compounds

1.0 INTRODUCTION

1.1 INTRODUCTION

This Environmental Assessment (EA) was developed to address the requirements under the National Environmental Policy Act of 1969, as amended (42 USC 4321et seq.), which requires all federal agencies to understand and disclose the environmental impacts from federal actions, and determine whether the impacts are significant, thus requiring the preparation of an environmental impact statement. The purpose of this EA is to examine the 2015 Draft Master Plan Update (NIH, 2015) projections for campus growth that would accommodate the evolving campus design at RML, and to evaluate the environmental impacts associated with demolishing or renovating and constructing buildings.

The National Institutes of Health's (NIH) Rocky Mountain Laboratories (RML) occupies a 37-acre facility in Hamilton, Montana (**Figure 1**). As of 2014, the campus consisted of 39 buildings, totaling 363,266 gross square feet (GSF), and housing 372 research scientists, administrators, and support staff. The main campus components include laboratories, veterinary branches, administrative services, central plants, maintenance shops, equipment storage, and chemical and hazardous material storage.

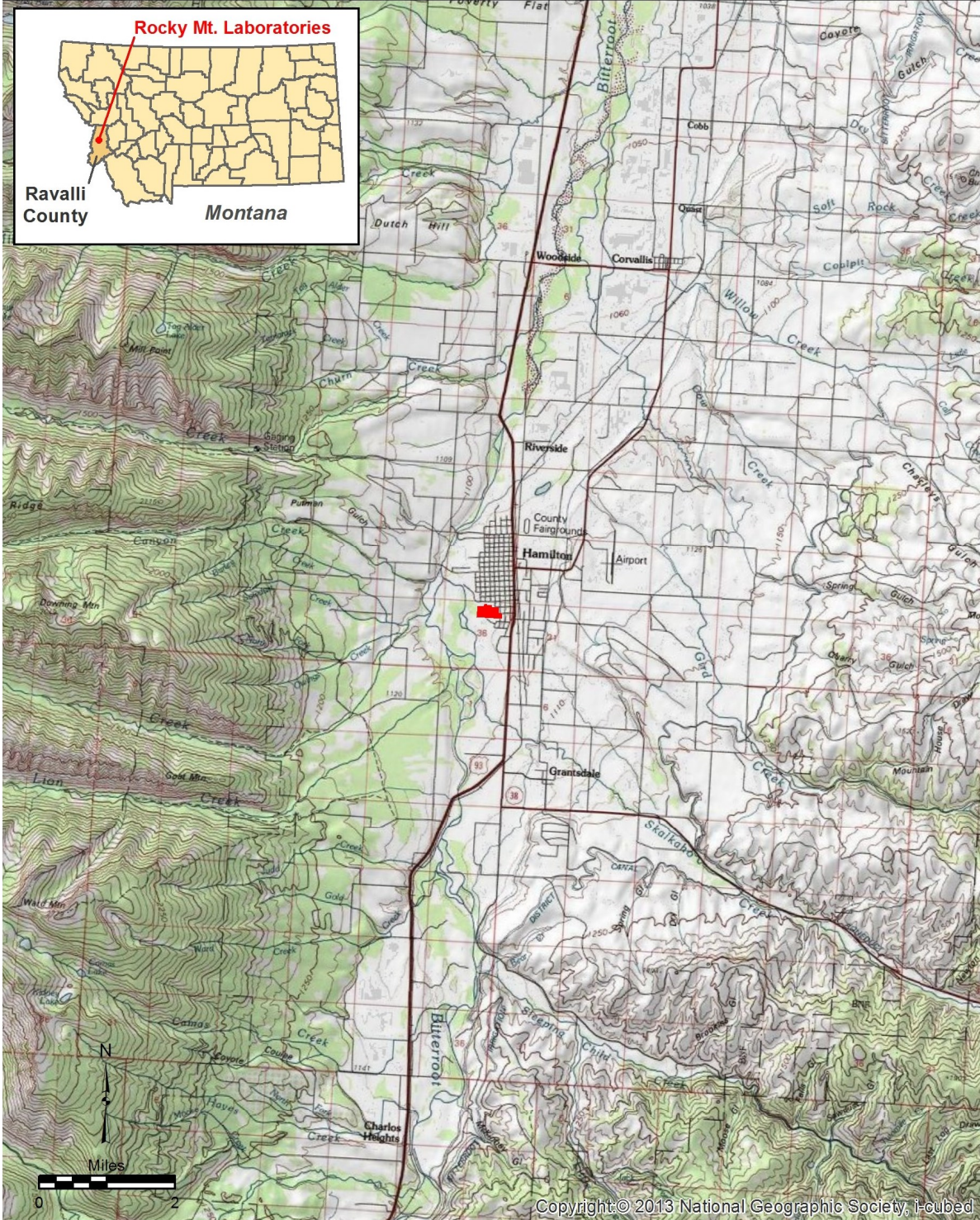
The U.S. Department of Health and Human Service (HHS) requires Master Plans for all campuses occupied by HHS employees that contain two independent buildings or involve two different activities. The first comprehensive RML Master Plan was developed in 2009 (NIH, 2009a). In addition to complying with HHS requirements, the 2009 plan addressed growing physical security requirements, community concerns about campus development and effects on natural resources, and general community concerns about RML activities. An environmental review of the 2009 Master Plan was documented in the *Final Environmental Impacts Statement for the Master Plan* (FEIS)(NIH, 2009b). The analysis in the environmental impact statement is incorporated into this EA by reference.

Since 2009, the RML campus has undergone changes and HHS requires facilities to validate and revise master plans about every five years. The proposed action is the resulting 2015 Draft Master Plan Update (NIH, 2015) that was prepared to comply with HHS requirements and meet the following objectives:

- validate and update development proposed in the 2009 Master Plan;
- define real property assets that support the execution of programs housed at the RML campus and guide developments in support of NIH's mission to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability;
- provide a framework for the changing character, nature and priority of RML's biomedical research programs in immunology, allergy, and infectious diseases;
- provide a long-range plan for the RML campus and outline a strategy for accommodating potential campus development subject to future NIH priorities and available resources; and
- identify the opportunities and physical limitations of the campus and project future staff population and associated facilities for planning purposes.

Figure 1. Location Map


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March 2016

**Location Map
Rocky Mountain Laboratories
Ravalli County, Montana
RML 2015 Master Plan Update**

Legend

 Rocky Mountain Laboratories

A 2013 review found that the 2009 Master Plan was still applicable, while several new considerations needed to be incorporated. The 2014 Rocky Mountain Laboratory Physical Security and Space Needs Assessment (Dewberry, Perkins+Will, & Hinman, 2014) identified additional program needs that include the following:

- Biosafety level 2 and 3 laboratory space;
- Specialized animal research space;
- Space for a flexible and scalable information technology infrastructure;
- Administrative space for procurement personnel;
- Conference space;
- Space for long-term storage of samples;
- Replacement of functionally unsuitable buildings;
- A facility for service and support personnel;
- Recycling, general waste, and surplus equipment short-term storage area
- Garage for two hazardous material response trucks; and
- Utility improvement to accommodate demand from items listed above.

2.0 PURPOSE AND NEED OF THE PROPOSED ACTION

2.1 PURPOSE

The RML 2015 Draft Master Plan Update fulfills the HHS requirement that campuses have regularly updated master plans, containing near and long-term recommendations for facility use and development. The 2015 Master Plan aims to comply with HHS obligations with the purpose of supporting the mission, research, and development of the RML.

2.2 NEED

The RML 2015 Draft Master Plan Update is needed to meet identified program needs. The update will identify and analyze existing RML site conditions, new requirements, facility deficiencies, and development needs. The plan is also needed to prioritize projects for new construction, repairs and modernization, and to provide facilities to accommodate projected growth in personnel, research, and associated support facilities over the course of the next 20 years. Additionally, the proposed action is needed so NIH can continue to accomplish the goals identified in the 2009 Master Plan.

3.0 PURPOSED ACTION AND ALTERNATIVES

3.1 PROPOSED ACTION – UPDATE THE MASTER PLAN

Phase 1 activities in the 2009 Master Plan have largely been completed as planned with exceptions noted below. Other actions not described below would be implemented as described in the 2009 Master Plan (NIH, 2009b).

Realization of the Master Plan depends on HHS and NIH priorities, governmental policy decisions and budgets.

Figure 2 shows the locations of the buildings and structures discussed in this section.

3.1.1 Updates to Goals

Goals for the 2015 Draft Master Plan Update are the same as the 2009 plan and include the need to provide a flexible framework for a “living campus”, one able to adapt to NIH program needs; provide an attractive campus whose setting and composition promotes collegial interaction; provide a secure, supportive, and convenient work environment for RML staff; enhance the appearance of the RML campus so it complements the surrounding residential community; protect, conserve and enhance RML’s natural, historic, and scenic resources; and foster improved communication about NIH goals and policies through the planning process. The 2009 Master Plan identifies six planning goals along with objectives. The update would incorporate a seventh goal to reflect the Office of Management and Budget’s emphasis in 2012 on “efficient and effective” spending directives as outlined for real property resources:

Goal 7. Meet the Federal Real Property Council’s Performance Measures with objectives of;

- Mission Dependency;
- Condition Index;
- Facility Utilization;
- Operations and Maintenance Costs; and
- Disposal of Unneeded Assets.

3.1.2 Updates to Employment

In 2014, RML employed 372 people. The 2009 Master Plan anticipated 427 staff would be employed at RML in 20 years (by 2029). The 2015 Draft Master Plan Update anticipates a potential of up to 511 employees within the next 20 years (by 2035).

3.1.3 Updates in Square Footage

The 2015 Master Plan Update will increase the overall GSF of the buildings on the RML campus. Modifications to building space, construction (const.) and demolition (demo.), and usage from the 2009 Master Plan to the 2015 Draft Master Plan Update are shown in **Table 1**.

Figure 2. 2015 Master Plan Update Layout

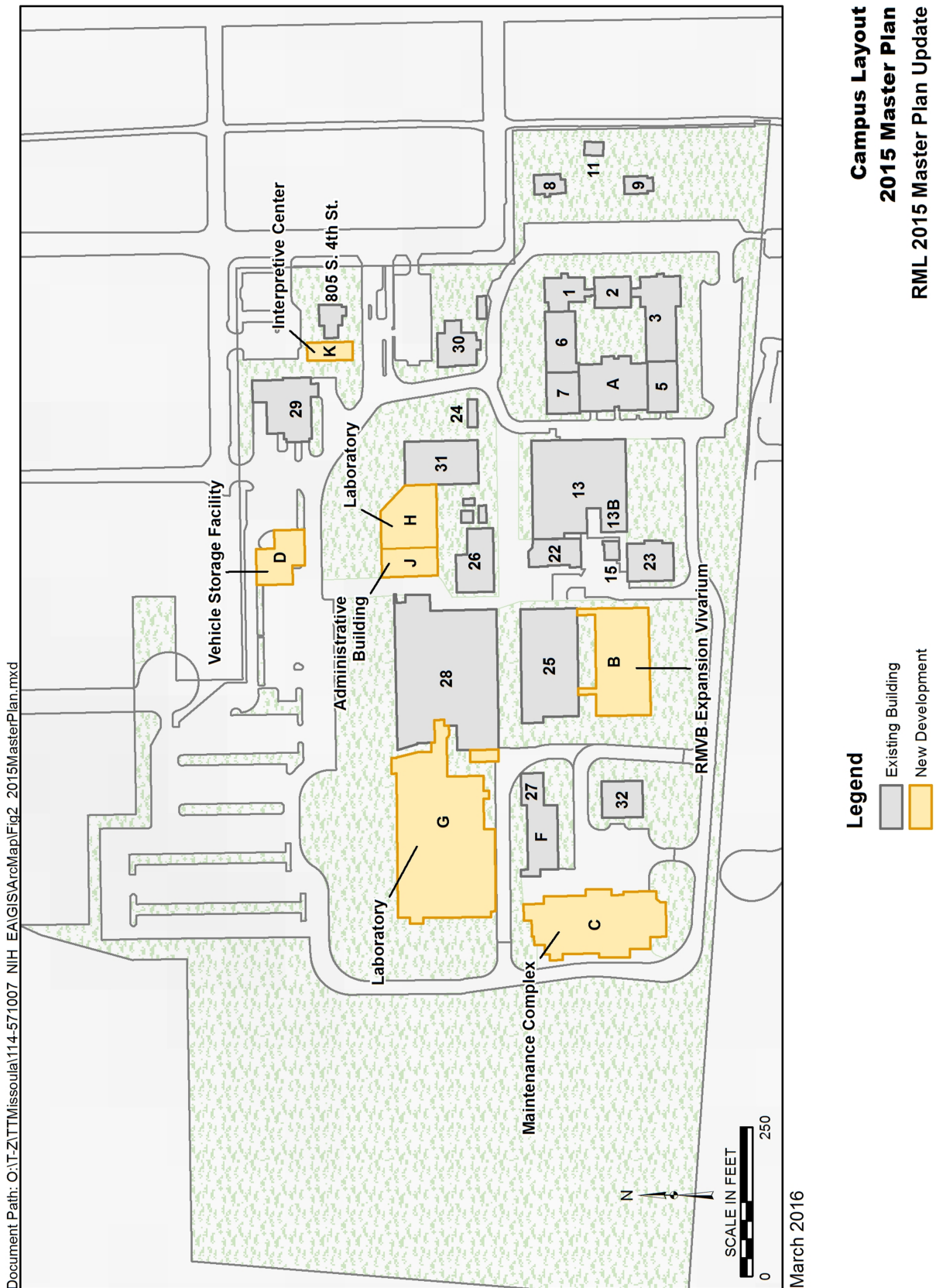


Table 1. Space (GSF) Updates from 2009

Projects	2009 Demo. (GSF)	2009 Const. (GSF)	2015 Demo. (GSF)	2015 Const. (GSF)	Change
2009 Master Plan Phase 1					
Construct Incinerator Storage Facility in Building E					Incorporated into the incinerator scrubber project (expansion of Building 23). Completed June 2015.
2009 Master Plan Phase 2					
Construct Building C as Maintenance Facility		30,316		30,190	Moved to Phase 1 from Phase 2, and change in size.
Construct Building D for Long Term Storage Facility		4,030		5,665	Change purpose to a Waste Marshalling and Vehicle Storage Facility, increase size by 1,635 GSF.
Construct Building G as Research Laboratory Building		58,721		70,000	Size increased by 11,279 GSF. Includes construction of Building 28 Chiller Addition as part of Building G (1,000 GSF).
Demolish Building T-23	-4,908				Moved to Phase 1 from Phase 2.
Demolish Building HD 1-5	-2,804				Moved to Phase 1 from Phase 2.
Demolish Building 12	-7,690				Moved to Phase 4 from Phase 2.
Demolish ARMCO 1 and ARMCO-2			-5,536		Renovate in Phase 2, demolish in Phase 4.
Demolish temporary animal facility, Building 32	4,020				Not described in 2015 Master Plan.
2009 Master Plan Phase 3 Projects					
Construct Building H as Central Stock Room and Building J as Seminar Room		15,244		13,140 10,000	Construct Building H as Genomics Laboratory and Building J use as Administrative Services including administrative space, conference and

Table 1. Space (GSF) Updates from 2009

Projects	2009 Demo. (GSF)	2009 Const. (GSF)	2015 Demo. (GSF)	2015 Const. (GSF)	Change
					collaboration space, and archival storage; change size
2009 Master Plan Phase 4 Project					
Construct Building K as Interpretive Center		3,410		3,400	Change in size.
Total Constructed GSF (2009 compared to 2015)		111,721		132,395	

3.1.4 Updates in Projects

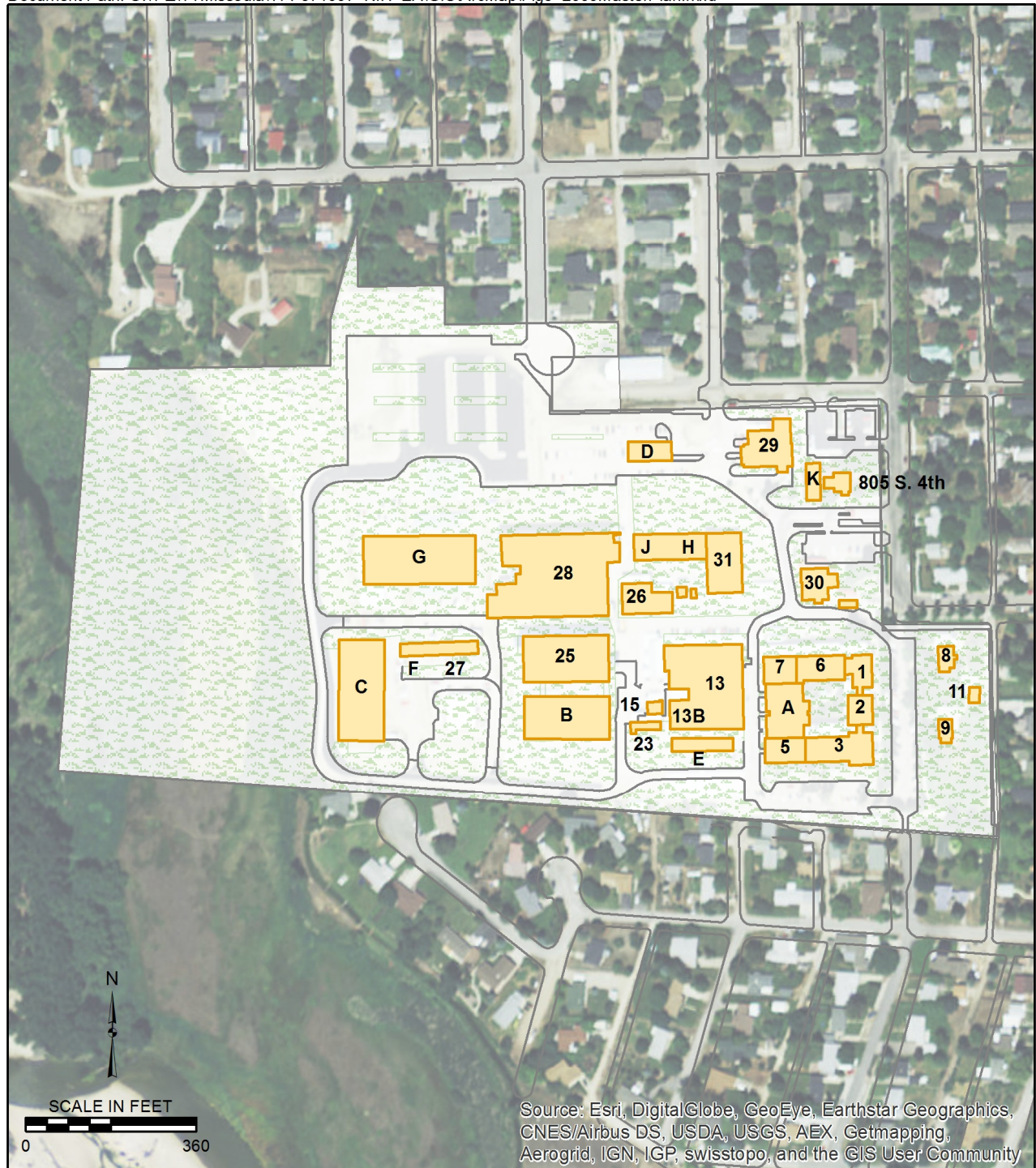
- A tank farm was built between Buildings 12 and 13 in 2010 as part of Phase 1. This location is different than the location discussed in the 2009 Master Plan.
- Construction of an Incinerator Storage Facility did not occur in Building E and this building has been eliminated from the 2015 Master Plan Update. The Incinerator Storage Facility was incorporated into the Building 23 expansion, completed June 2015.
- Buildings 8 and 9 are being renovated into administrative space, and these projects are anticipated to be completed in 2016.
- Renovation of the ARMCO-1 and ARMCO-2 and construction of an addition to link the two structures is in development. This project will add 1,440 GSF.
- Demolition of Conex 1, T-25, and SS1-4 is planned but not underway. Demolition of these structures will remove 1,448; 2,000; and 1,904 GSF, respectively, for a total of 5,352 GSF.
- Building D will be used as a waste and hazard material vehicle storage facility. Building 22 will be renovated to support facility functions.
- Building F/Building 27 expansion project completed in 2016.
- Phase 2 will include landscape improvements related to Phase 2 construction projects.
- A central pedestrian concourse was constructed in 2015.
- Building 24 will not be demolished.
- Quad will be renovated to house the Visual Medical Arts branch in 2016.
- Relocate administration and Visual Medical Arts functions to Quad in 2016.
- Phase 3 will include landscape improvements related to Phase 3 construction projects.

3.2 NO ACTION – DO NOT UPDATE THE 2009 MASTER PLAN

The No Action alternative would be to not implement the 2015 Draft Master Plan Update. **Figure 3** shows the layout in the 2009 Master Plan.

Figure 3. 2009 Master Plan Facility Layout

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March 2016

Campus Layout
2009 Master Plan
RML 2015 Master Plan Update

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

As stated in Section 1.1, the impacts analysis in this EA are based on the analysis completed and documented in the 2009 FEIS (NIH, 2009b), which is incorporated by reference. Where the impacts on the resources analyzed would be the same as disclosed in the FEIS, a summary of those impacts appear. Where changes occurred and impacts are different than stated in the FEIS, an updated analysis and rationale is provided.

Besides modification to meet the Program Needs discussed in Section 1.1, updates were needed to identify and meet requirements of new policies and regulations. The 2015 Draft Master Plan Update discusses all of the regulations and policies the master plan is designed to meet in Section 1.5 (starting on page 1-10 of the 2015 Draft Master Plan Update). The regulations and policies that have been implemented since the 2009 Master Plan and FEIS include:

- HHS Real Property Asset Management Plan provides a roadmap to promote efficient and economical use of federal real property resources that are required to support the Department's missions and strategic goals.
- HHS Strategic Sustainability Performance Plan: Sustainability is integral to the HHS mission, which is to protect the health of all Americans and provide essential human services, especially to those who are least able to help themselves. Sustainability has been defined as “the enduring prosperity of all living things.” By this measure, sustainability is directly linked to the health of humans, the health of the environment, and the health of economic systems that support and promote our well-being. This triple health bottom line – human health, environmental health and economic health– is integral to HHS’s mission and the sustainability mandates of Executive Order 13514. The following discussion focuses on goals of Executive Order (EO) 13514 that are relevant to the RML:
 - GHG Reduction- According to Executive Order 13514, HHS already met its Scope 1 and 2 GHG goal of reducing its FY 2008 baseline GHG emissions 10.3 % by FY 2020. It achieved a 21 % reduction in FY 2014. HHS also met its Scope 3 goal of reducing its FY 2008 baseline GHG emissions 3.3 % by FY 2020. It achieved a 21.8 % reduction in FY 2014. To reach the FY 2020 reduction targets in FY 2014, HHS focused on reducing energy use for Scope 1 and 2 GHG emissions and employee travel for Scope 3 emissions (Ted Kozak, August 4, 2015).
 - Sustainable Buildings- HHS has reduced energy use intensity in its facilities, most of which are energy-intensive laboratories and medical facilities. HHS is on track to meet EO 13514 mandates for reducing energy use intensity and the requirements of the Energy Independence and Security Act of 2007 (EISA 2007), which requires each agency to reduce its FY 2003 baseline energy use intensity 30 % by FY 2015. HHS has already reduced energy use intensity 28 % compared to its FY 2003 baseline and is on track to meet the 30 % goal by FY 2015 (Ted Kozak, August 4, 2015). HHS is behind on the Executive Order 13514 requirement that 15 % of new, existing, and leased buildings larger than 5,000 GSF comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles) by FY 2015. By FY 2014, 13 % of the applicable buildings were required to comply; however, only 0.9 % of applicable HHS buildings currently comply. Additionally, 13 % of the gross square footage in buildings larger than 5,000 GSF was

required to comply with the Guiding Principles by FY 2014. Only 6.2 % of the gross square footage in the applicable buildings incorporated the Guiding Principles in FY 2014. HHS will continue to miss these targets as it would be fiscally irresponsible to spend mission-critical funding on renovating the many older facilities in the HHS inventory, which are nearing the end of their useful lives, just to achieve this goal. HHS continues to comply with the Guiding Principles and reduce energy intensity to the greatest extent possible.

- Water Use Efficiency and Management- Executive Order 13514 requires agencies to reduce potable water intensity by 2 % annually between FY 2007 and FY 2020. HHS reduced potable water intensity by 14.5 % in FY 2014 compared to its FY 2007 baseline. It is on track to meet the goal of an overall 26 % reduction by FY 2020. HHS continues to work toward the EO 13514 and EISA 2007 goals for water use efficiency and management.
- Renewable Energy- Executive Order 13514 requires agencies to increase the use of renewable energy. Further, EPACT 2005 requires agencies to increase renewable energy use so that 7.5 % of the agency's total electricity consumption is generated by renewable energy sources in FY 2014 and beyond. HHS total electricity use included 11.9 % from renewable energy sources and met the goal of 7.5 % for FY 2014. The Energy Policy Act of 2005 required that, in FY 2014, 7.5 % of an agency's total electricity consumed must come from renewable energy. In addition, at least half of the renewable energy must come from new sources, placed in service after 1999.
- Executive Order 13653 - Preparing the United States for the Impacts of Climate Change, November 1, 2013.
- Executive Order 13690 - Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, January 30, 2015.
- Executive Order 13693 - Planning for Federal Sustainability in the Next Decade, March 19, 2015.

When these new regulations and policies have implications for resource impacts, they have been identified in each resource analysis.

Impacts of the No Action alternative are disclosed in the FEIS and will not be repeated here.

4.2 SOCIAL RESOURCES

4.2.1 Affected Environment

The affected environment and regulatory requirements addressing Social Resources are the same as disclosed in the 2009 FEIS. However, the staff increase in the Proposed Action over what was analyzed in the FEIS (a maximum 20 year total of 427 employees in the 2009 FEIS versus the 2015 Master Plan Update number of 511 employees), would have slightly different effects on Social Resources.

4.2.2 Direct and Indirect Effects

The Proposed Action could increase the number of new residents who would move to Ravalli County slightly compared to what is already anticipated, assuming current growth trends. Between April 1, 2010 and July 1, 2014, the population of Ravalli County grew by 818 people (2.0 percent) (US Census Bureau, 2015). Under the Proposed Action, laboratory staff would increase from the 2014 number of 372 to 511 (139 people) by 2035. At the current growth rate of 0.51 percent per year, the population of

Ravalli County (41,030 people in 2014) would increase by about 10.2 percent in 20 years, or about 4,200 people. The average household size is 2.39 people per household. The projected increase from RML's 139 additional employees could equate to 332 new residents if all chose to live in Ravalli County. The 332 new residents represent about 8 percent of the project Ravalli County growth in 20 years.

Effects on housing would be similar to those described in the FEIS. The addition of new homes would result in an increase in business for homebuilders and real estate developers.

School capacity would not be affected by the additions of school-aged children associated with increased employees.

4.2.3 Cumulative Effects

Cumulative effects on county growth from RML's employment is expected to be a little higher than originally analyzed in the FEIS. The 2009 FEIS anticipated a 22 percent increase in the number of RML staff while the 2015 Master Plan Update anticipates a 30.4 percent increase. However, cumulative effects on population, housing, and school capacity would have little effect on population trends and would not be distinguishable from growth that would occur without the Proposed Action.

4.3 ECONOMIC RESOURCES

4.3.1 Affected Environment

The affected environment, regulatory requirements, and environmental consequences on economic resources would be the same as disclosed in the 2009 FEIS, except for the employees. The 2009 Master Plan estimated a total of 427 employees by 2029 while the Draft 2015 Master Plan update estimates a total of 511 employees by 2035, which is 139 employees more than the 372 employees in 2014.

4.3.2 Direct and Indirect Effects

Many scientific staff positions may be recruited at the national level and from colleges and universities in Montana. However, support staff would likely be hired from the local population so the additional employees may affect the employment rate. Additionally, some of the new employees would be working at higher paying jobs so the per capita personal income in Ravalli County would likely increase slightly.

4.3.3 Cumulative Effects

Under the Proposed Action, new residents would be added to Ravalli County's population, possibly adding stress to community service providers and infrastructure. However, cumulative effects on housing, schools, and infrastructure would not be noticeable or distinguishable from other growth.

4.4 WATER AND WASTEWATER

4.4.1 Affected Environment

The affected environment would be as described in the 2009 FEIS. Regulatory requirements would be similar, except for the implementation of Executive Order 13693 – Planning for Federal Sustainability in the Next Decade was signed March 19, 2015. Executive Order 13693 mandates an improvement in

water use efficiency and management by reducing agency potable water consumption by fiscal year 2025 through enumerated reductions of water consumption; installing water meters, and improving conservation.

4.4.2 Direct and Indirect Effects

Environmental consequences on water and wastewater would be the similar to those disclosed in the FEIS for the Proposed Action, except for the addition of 139 employees using water and contributing the wastewater.

Based on the Proposed Action's implementation growth, increases are expected for water consumption, and wastewater discharge rates and volumes. These increases are within the capacity of the municipal water supply and waste water treatment (Hamilton, MT, 2016).

4.4.3 Cumulative Effects

Impacts on the water supply, sanitary and wastewater treatment would be the same as described in the FEIS. There would be additional demand on the municipal water supply and waste water treatment plan but it would not exceed the capability of the systems. Treatment would continue to meet Montana Department of Environmental Quality requirements.

4.5 SUSTAINABLE BUILDING DEVELOPMENT

4.5.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences would be the same as disclosed in the 2009 FEIS.

Regulatory requirements in 2009 are the same as 2015 requirements with the exception of Executive Order 13693 – Planning for Federal Sustainability in the Next Decade was signed March 19, 2015. This order requires that by 2020, new construction of Federal buildings greater than 5,000 GSF be designed to achieve energy net-zero and, where feasible, water and waste net-zero by fiscal year 2030. A net-zero energy building is designed, constructed, and operated to require a greatly reduced quantity of energy to operate, meet the balance of energy needs from sources of energy that do not produce greenhouse gases, and therefore result in no net emissions of greenhouse gases while being economically viable. In the RML Master Plan Update all projects in Phase 2 and later should be designed to meet this target.

The Proposed Action would comply with the Energy Independence and Security Act of 2007, Executive Order 13423, and the HHS Real Property Asset Management Plan because improvements and repair projects that have a total project cost equal to or greater than \$3 million would obtain certification from the U.S. Green Building Councils' LEED or through the Green Buildings Initiative's Green Globes green building rating system.

4.5.2 Direct and Indirect Effects

In compliance with the regulatory requirements stated above and the HHS Real Property Asset Management Plan, all newly constructed buildings would follow the policies and incorporate the strategies into planning, design, and construction processes. Existing facilities would incorporate the primary elements to the maximum extent feasible in all improvement and repair projects, if they have a total

project cost equal to or greater than one million dollars, and in all maintenance projects if they have a total project cost equal to or greater than three million dollars. All leased facilities must also comply with requirements, objectives, and goals to the maximum extent feasible as one criterion for lease evaluation.

Improvements and repair projects that have a total project cost equal to or greater than three million dollars would obtain certification from the U.S. Green Building Councils' LEED (Leadership in Energy and Environmental Design) or through the Green Buildings Initiative's Green Globes green building rating system.

4.5.3 Cumulative Effects

Sustainable building development in compliance and the HHS Real Property Asset Management Plan would have positive cumulative effects as future development would ultimately result in reductions in the total ownership cost of facilities, improve energy efficiency and water conservation, provide safe, healthy, and productive built environments; and promote sustainable environmental stewardship.

4.6 EXTERIOR LIGHTING

4.6.1 Affected Environment

The affected environment, regulatory requirements, environmental consequences, and mitigation imposed would be the same as disclosed in the 2009 FEIS.

4.6.2 Direct and Indirect Effects

The Proposed Action would result in increased roadway, parking, facility, and grounds lighting. As of 2015, many of these projects have already been completed. Light control on the north, east, and south perimeters minimize light pollution. Exceptions to lighting requirements and recommendations have been made for safety and security concerns.

The RML contributes less light pollution than a large commercial development given that RML does not advertise its location with highly visible signage or intense lighting to grab the attention of passersby. However, due to parking areas and roadway lighting, a small portion of emitted light contributes to light pollution in the vicinity of the campus. This pollution is managed by using the latest methods and technologies to minimize overall impacts on surrounding areas.

Minimal trespass light is emitted using measures based on the International Dark Sky Association lighting principles. These mitigating factors result in minor impacts on the surrounding community.

4.6.3 Cumulative Effects

Cumulative effects from exterior lighting due to the 2015 Draft Master Plan Update would not be distinguishable from existing conditions.

4.7 NOISE

4.7.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences would be the same as disclosed in the 2009 FEIS.

4.7.2 Direct and Indirect Effects

Under the Proposed Action, RML would upgrade and expand its facilities. However, these upgrades would be designed to avoid noise issues. RML has established self imposed noise criteria to limit the amount of noise at the campus boundaries. Past RML projects specifically focused on reducing noise and ensuring the campus was in compliance with the standards. RML prepares a noise analysis for each new project to demonstrate the new project would keep the campus in compliance with noise standards. After each project is complete, noise levels are measured to ensure the requirements have been met. As a new project progresses, RML would identify potential noise problems in the design phase, and determine what, if any, noise control measures would be implemented. RML conducts periodic noise monitoring and generates reports of their findings.

4.7.3 Cumulative Effects

The equipment on the RML campus determines the ambient noise levels in the vicinity of the campus, and would continue to do so into the future since the surrounding residential and open space areas are expected to remain.

4.8 HISTORICAL RESOURCES

4.8.1 Affected Environment

The affected environment, regulatory requirements, and environmental consequences on historical resources would be the same as disclosed in the 2009 FEIS.

The Rocky Mountain Laboratory Historic District (24RA373) is listed on the National Register of Historic Places (NRHP) and Buildings 1 through 10 are considered to have primary significance or are considered to be contributing elements to the district. The district’s period of significance extends from 1927 to 1945, and the district is eligible to the NRHP under criteria A and C. Respectively, these criteria concern the lab’s association with scientific advances in the development of vaccines for insect-borne diseases, and the lab’s Collegiate Gothic and Colonial Revival architecture.

Buildings are slated for demolition that are already older than 50 years or would be when demolished. **Table 2** shows year of construction of buildings planned for demolition.

Table 2. Buildings Proposed for Demolition Built Before 1979

Building Number	Construction Date	Will need evaluated if demolished after
12	1964	2014
22	1970	2020
ARMCO 1	1962	2012
ARMCO 2	1964	2014
HD1	1967	2017
HD2	1967	2017
HD3	1967	2017
HD4	1967	2017

Buildings older than 50 years will need to be evaluated. Although construction dates for these buildings fall outside the district's period of significance (1927-1945), they may be contributing elements under Criterion A. RML has a continuing history of scientific advances and the district's period of significance likely requires revision.

4.8.2 Direct and Indirect Effects

Potential adverse effects to the RML Historic District include visual intrusions to the district's setting. The construction of additional buildings represents such an intrusion.

Increased traffic and the construction of additional buildings in the viewshed of the RML Historic District would cause some minor impacts, but these impacts would not harm the qualities of the laboratory that make it significant for listing in the National Register. Therefore, the Proposed Action would have no adverse effect on the RML Historic District.

4.8.3 Cumulative Effects

Planning principles have been established to protect the property's integrity. Reasonable foreseeable actions could have an effect on the historical resources of the RML, however evaluation prior to demolition would prevent cumulative impacts that would be adverse to the RML Historic District.

4.9 AIR QUALITY

4.9.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences would be the same as disclosed in the 2009 FEIS.

4.9.2 Direct and Indirect Effects

Under the Proposed Action, gaseous and particulate emissions would be generated during normal operation at RML. Direct effects to air quality would result from increased emissions associated with increased generation of medical waste, increased boiler use and/or the addition of a boiler for heating, and testing and running backup diesel generators in the event of a power outage. Increases in incinerator, boiler, and generator emissions would be monitored under conditions of the RML air quality permits: Montana Air Quality Permit 2991-04 and Environmental Protection Agency's Title V Operating Permit #OP2991-00.

The 2009 FEIS determined incineration of medical waste does not result in proportional increases in air emissions due to the highly efficient design of the wet scrubber system and flue gas filtration. Planned increases in incinerated medical waste would not exceed permit values for nitrogen oxides (NO_x), sulphur oxides (SO₂), carbon monoxide (CO), particulate matter (PM₁₀), and volatile organic compounds (VOC). Furthermore, the majority of air emissions results from operation of the natural gas fired boilers which also do not exceed permit values. It is anticipated that emissions from the weekly testing or use of diesel generators in the event of a power outage would increase as new generators are added to campus. Impacts on air quality would be minor as the newly installed generators take advantage of new diesel technology for low emission stationary generator sets that comply with Environmental Protection Agency's Tier 2 standards. Emissions from the new larger generators may be lower than existing older generator sets. All generators would meet Environmental Protection Agency standards for emissions.

Construction activities would generate short-term air quality impacts from fugitive dust and gaseous emissions from construction equipment. Fugitive dust would be controlled through dust control measures. Gaseous emissions would be controlled through management of construction work hours. Overall, fugitive dust emission resulting from current exposed ground areas would decrease due to site improvements such as vegetation/landscaping and improved asphalt parking areas.

4.9.3 Cumulative Effects

The minor increase in emissions would be added to emission values from 14 other permitted sources in Ravalli County. Particulate matter from wildland fire is highly variable from year to year, but is expected to continue. Since the Proposed Action would comply with ambient air quality standards, cumulative effects would not be noticeable compared to other ongoing activities.

4.10 STORM WATER

4.10.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences would be the same as disclosed in the 2009 FEIS. Storm water management improvements, mandated by Executive Order 13693, include installing appropriate green infrastructure features to help with storm water and wastewater management.

4.10.2 Direct and Indirect Effects

Changes in impervious surfaces were analyzed using Natural Resources Conservation Service (NRCS) methods (NRCS, 1986). Surface types were classified into two categories: low permeability- buildings, roads, and parking areas; and high permeability-landscaped areas and native vegetation. Infiltration rates vary for different surface types affecting surface runoff. Estimates were made for a 2-year 24-hour storm event. RML could contribute minor amounts of stormwater to local waterways as stormwater would be captured onsite and infiltrated into the soil and eventually return to the groundwater.

Specific location, extent, distribution, and design of stormwater runoff BMPs have been implemented with the various stages of proposed construction. BMPs were engineered to accommodate estimated storm event precipitation to state and national standards. RML ensures the long-term effectiveness of its stormwater runoff BMPs through regular inspection and maintenance.

The effects of stormwater runoff on local waterways would be minimal.

4.10.3 Cumulative Effects

Urbanization would continue in the Hamilton area and stormwater runoff would continue to increase as pervious soils such as grasslands are converted to impervious surfaces. In addition, sediment and pollutants would likely continue to reach area waterways from sources such as soils eroded from steep slopes following a local forest fire.

Achieving the goal of no net increase in stormwater runoff from the RML campus would result in possible minor cumulative effects on local waterways.

4.11 WETLANDS, FLOODPLAINS, AND RIPARIAN AREAS

4.11.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences on wetlands, floodplains, and riparian areas would be the same as disclosed in the 2009 FEIS.

4.11.2 Direct and Indirect Effects

Riparian areas, floodplains, and wetlands would not be affected by the Proposed Action because these areas would not be developed.

4.11.3 Cumulative Effects

Because there would be no direct or indirect effects, there would be no cumulative effects.

4.12 FISH AND WILDLIFE

4.12.1 Affected Environment

The affected environment, regulatory requirements and environmental consequences on fish and wildlife would be the same as disclosed in the 2009 FEIS.

4.12.2 Direct and Indirect Effects

Fish would not be impacted because fish habitat would not be disturbed and water quality would not be degraded. The campus provides little wildlife habitat, as vegetation consists of native and non-native grasses and weeds. There would be no effect on wildlife because of the small area of disturbance and no loss of habitat.

4.12.3 Cumulative Effects

The 2015 Draft Master Plan Update would not have a cumulative effect on fish or wildlife species or significant habitat.

4.13 THREATENED AND ENDANGERED SPECIES

4.13.1 Affected Environment

Since the 2009 FEIS, the yellow-billed cuckoo has been listed as a threatened species. The yellow-billed cuckoo was addressed in the 2009 EIS as a candidate for listing. Otherwise, the affected environment, regulatory requirements, and environmental consequences on threatened or endangered would be the same as disclosed in the 2009 FEIS.

4.13.2 Direct and Indirect Effects

No effect on threatened or endangered species or their critical habitat would result from the Proposed Action. Water and air quality would be maintained and areas outside of the potential future construction areas would not be disturbed.

4.13.3 Cumulative Effects

Because there are no direct or indirect effects, there would be no cumulative effects on threatened or endangered species.

4.14 TRANSPORTATION

4.14.1 Affected Environment

The regulatory requirements for transportation would be the same as disclosed in the 2009 FEIS. The 2009 EIS projected campus employment would grow from 350 in 2008 to 427 in 2029 (now the No Action). The Draft 2015 Master Plan Update projects the employment increasing to 511 by 2035.

4.14.2 Direct and Indirect Effects

The RML campus is proposing the continued use of the existing two entrances. Since the 2009 Master Plan, RML has added the secondary emergency vehicle exit where 6th Street terminates on the north side and one at the south end of 4th Street. As expected, these entrances do not require traffic signals to control traffic flow. The 2009 Master Plan called for the construction of a two-way campus loop road around the north, west, and south portions of the campus. Instead, a modified traffic flow pattern was developed (**Figure 3**). Additionally, since the 2009 Master Plan, the City of Hamilton instituted a residential parking district adjacent to RML to control employee parking on residential streets.

Trip Generation: Trip generation calculations used in the 2009 FEIS for the future development used descriptions of land use, employees, and equations in the *Institute of Transportation Engineers Trip Generation, 7th Edition* informational report (ITE, 2004). Calculations of weekday trips added average 3.1 trips per week per employee. The calculations assume that all new employees to the campus would be traveling by motorized vehicle.

The development of the RML campus under the Proposed Action would produce increased traffic volumes on the area's roadways from planned increases in employment.

- Under the no action alternative with already planned development, 55 additional employees would result in addition 171 trips per week by 2029.
- Based on the 2014 employment, the proposed action would increase the trips for the 119 additional employees by 369 trips per week by 2035.

For Hamilton, this increase in weekday trips is still relatively small in comparison with the increase in background traffic for the collector routes in Hamilton.

4.14.3 Cumulative Effects

In evaluating the location of the campus and the surrounding neighborhoods, availability and zoning; future developments would not have a negative cumulative effect on the area roadway network. There would be some increase in localized traffic volumes on the roadways but the effects on campus traffic would be negligible. Background traffic would continue to grow on Highway 93. This growth in background traffic would stay limited to Highway 93 and would not have adverse impacts on the roadways surrounding the campus.

5.0 REFERENCES

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