



THE UNITED STATES AIR FORCE

# CIVIL ENGINEER ANNEX

TO THE BASING AND LOGISTICS FLIGHT PLAN

JANUARY 2020

# TABLE OF CONTENTS

Message from the Director .....	1
Purpose .....	2
Strategic Environment .....	2
Functional Strategic Context .....	2
Civil Engineer Truths .....	2
Civil Engineer Desired End States .....	3
Strategic Approach – The “Ways” .....	4
Campaign Plans .....	4
The Importance of Asset Management .....	5
Conclusion .....	5

## MESSAGE FROM THE DIRECTOR

Our world is changing. With rapid cultural shifts, advances in technology and business practices, as well as longer term geopolitical factors and climate trends, we must consider what conditions the Civil Engineer enterprise and Airmen Engineers may face in 10-20 years. What skills and tools will they require to prevail? The decisions we make today will alter how ready they will be for future challenges.

The CE Enterprise has developed a collection of strategic documents – influenced by the National Defense Strategy and the priorities of our Secretary and Chief of Staff of the Air Force, and in support of the **Air Force's Basing and Logistics Flight Plan**. This "**CE Annex**" to the Basing and Logistics Flight Plan outlines the two future end states for the Civil Engineer enterprise – **Resilient and Right-Sized Installations**, and **Agile, Innovative, and Ready Airmen Engineers**. We will pursue these end states through three strategic efforts, each with its own campaign plan of targeted objectives and timelines. In an effort to guide this journey, the Director of Civil Engineers will track progress as engineers carry out the campaign plans.

Supporting the Resilient and Right-Sized Installations end state is the **Infrastructure Investment Strategy, or I2S**, signed by SecAF, CSAF, and all MAJCOM Commanders. The I2S focuses on the readiness, modernization, and resiliency of our infrastructure. Recognizing that installations are power projection platforms, the I2S guides how we plan, prioritize, and invest in their sustainment and modernization. This is further supported by the imperatives of adequate stable funding, application of asset management principles, and revitalized CE squadrons.

Our infrastructure is managed by agile, innovative, and ready Airmen Engineers. The **CE Human Capital Roadmap, or HCR**, provides an enterprise-level framework to ensure we properly envision, recruit, retain, and develop our team to reach this end state. This high-level implementing document outlines how the CE enterprise will help to sustain and strengthen our most precious resource, Airmen Engineers, and how we can build capacity to meet our challenges.

The heart of the strategy is the **Revitalize CE Squadrons Initiative, or RCES**, which outlines near-term efforts targeted at enhancing CE technical competencies and ensuring full-spectrum readiness where it matters most—in our squadrons. Our CSAF calls squadrons "the beating heart" of our Air Force, and I could not agree more. Our efforts must make a difference here, and should be the strongest consideration for our future planning.

These strategy documents were not created in a vacuum. Teams of dedicated Airmen from across our enterprise came together to identify challenges and develop a path forward. Airmen Engineers are known for leading the way. I challenge all CE leaders to understand our strategic direction and lead their Airmen to meet the future.

Engineers...Lead the Way!

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke, representing John J. Allen, Jr.

**JOHN J. ALLEN, JR., Brig Gen, USAF**  
Director of Civil Engineers  
DCS/Logistics, Engineering & Force Protection

## PURPOSE ▼

This Civil Engineer Annex to the Air Force's Basing and Logistics Flight Plan provides strategic focus by identifying enduring civil engineer truths that enable Air Force core missions. These truths inform the delivery of two desired end states – Resilient and Right-Sized Installations and Agile, Innovative, Ready Airmen Engineers – that can support the Air Force and Joint warfighter concepts. This Annex serves to influence Air Force planning and programming, and inform decision-making (e.g., funding, manpower, priorities) for CE leaders at all echelons. This Annex also serves to preserve the foundational tenants of the engineering enterprise and provide enduring guidance for current and future Airmen Engineers.

## STRATEGIC ENVIRONMENT ▼

The 2018 National Defense Strategy (NDS) established the strategic imperatives to compete, deter, and win in the increasingly complex global security environment. The emergence of near-peer competition requires a fundamental shift in priorities, investments, and capabilities for the fight ahead. The Joint Force must prepare to overcome the challenges imposed by adversaries in every operating domain, the acceleration of technological change, and the deterioration of full-spectrum readiness. To restore the United States' competitive edge, the NDS set the following goals: build a more lethal force, strengthen alliances and attract new partners, and reform for greater performance and affordability.

## FUNCTIONAL STRATEGIC CONTEXT ▼

Airmen Engineers must contend with significant fiscal constraints, aging and excess infrastructure, human capital shortfalls, and an increasingly uncertain geopolitical atmosphere. The character of conflict will also continue to evolve. Battlefields are more lethal, disruptive, and combined across different domains. Bases are no longer sanctuaries, as peer adversaries close the gap on competitive advantages, rapid technological change poses opportunities and threats, and effects from climate change threaten coastal and non-coastal installations alike. Despite a changing global environment, Airmen Engineers remain guided by our core truths which have stood the test of time and conflict throughout our history.

### ► CIVIL ENGINEER TRUTHS

The AF Civil Engineer enterprise considers these truths, informed by CE doctrine, to be foundational:

#### 1 **Air Force installations are power projection platforms**

Air Force readiness and lethality depends on an adaptable, resilient network of installations that enable multi-domain operations in all phases of conflict. They are where we deliberately build, deploy, and employ Air Force readiness. Installations also facilitate force generation capabilities such as operational and technical training, weapon systems acquisition, and depot maintenance, while providing Airmen and their families the safety, security, and quality of life they deserve. As Airmen Engineers, it is our job to establish, operate, sustain, protect, and recover enduring and expeditionary installations for the Air Force and other supported commanders.

#### 2 **Asset Management principles drive how we mitigate risk to installation health**

The Air Force operates in a resource-constrained environment, so it is critical that every dollar is invested with purpose and impact. We must ensure our installations are able to meet current and future mission requirements by using asset management principles to optimize resources and drive infrastructure investments at the right time. If installation health suffers, the mission suffers.

#### 3 **We measure readiness first and foremost by the readiness of the weapon systems we support**

As Airmen Engineers, we ultimately exist to enable Air Force readiness and lethality. Air Force weapon systems rely on resilient infrastructure and engineering and emergency response services across the full mission spectrum to operate effectively. If those weapon systems are not ready due to deficient infrastructure, then we are not ready.

## Total Force development at home enables Airmen Engineers to rapidly employ forces and adapt to full-spectrum threats

Air Force civil engineer squadrons are not public works departments; they are combat support units, comprised of combat-support Airmen. Airmen Engineers prepare for war during peacetime, train as organic units, employ in place in support of multi-domain operations at home, and deploy fully capable of rapidly establishing airbases to support the projection of airpower. We retain a force of active duty, Air Force Reserve, and Air National Guard engineers whose education, training, and experience enables them to deploy into conflict or disaster anywhere in the world at a moment's notice. Our civilian Airmen serve as crucial mentors, whose expertise and continuity enable them to be most responsible for developing our military Airmen. And when the time comes for personnel to deploy, we rely on our civilians to hold our strength at home and operate, protect, and recover Air Force installations.

## Presenting agile Prime BEEF and RED HORSE capabilities critically supports Combatant Commanders' projection of airpower

Prime BEEF and RED HORSE are two sides of the same coin. These units can rapidly deploy and operate in remote, high-threat environments around the world. They were born in wartime and are two of our greatest strengths as an engineering force. The cross-pollination between Prime BEEF and RED HORSE ensures we have Airmen Engineers with the breadth of engineering experience vital to helping the Air Force deliver mission success.

## Installations are built by, maintained by, and recovered by Airmen Engineers

Despite evolving threats, the mission of Air Force Civil Engineers has remained constant throughout our history: we build, we maintain, and we recover air bases. It's what we do. It requires a force of air-minded personnel —uniformed and civilian, engineering and emergency response — leveraging the capabilities and knowledge of one another. Whether we are at home in peacetime, employed in place, or deployed in an expeditionary environment, the Air Force expects us to ensure the readiness and lethality of its power projection platforms.

# CIVIL ENGINEER DESIRED END STATES ▼

The CE Enterprise will invest in its most important assets, **Airmen** and **installations**, to generate Civil Engineer capabilities for the future operating environment. Therefore, the CE Enterprise will link strategy, planning, programming, budgeting, and execution efforts to achieve the following End States:

### Agile, Innovative, Ready Airmen Engineers that enable mission requirements across the full spectrum of operations.

"Airmen Engineer" includes all Air Force uniformed (active and reserve components; officer and enlisted) and civilian civil engineers regardless of rank, component, or specialty. They excel in carrying out their duties, are willing to take calculated risks and learn from mistakes, are eager to challenge existing paradigms and champion new ideas, and are able to adapt in a changing and uncertain strategic environment to achieve mission success.

This requires that we continually evaluate the skills, capability, and capacity needed to fulfill mission requirements to envision the force we need. We will leverage tools and partnerships to recruit, develop, and retain skilled Airmen.

### Resilient and Right-Sized Installations that enable multi-domain missions across the full spectrum of operations.

Resilient and right-sized installations are essential Basing and Logistics capabilities. Air Base Resilience is the ability to protect against, operate through, and recover from attacks or disruptions that degrade air, space, and/or cyber operations. Right-sized installations must have adequate infrastructure to meet validated mission-driven requirements, as well as approved contingency plans.

Engineers will continue to work to increase space utilization of quality facilities while enabling the demolition of poorly performing facilities. We must wield infrastructure data to inform decision-making and investments at all levels of the Air Force, with business practices that balance risk and cost, and are audit-ready.

## ► CAMPAIGN PLANS

The CE Enterprise will implement its strategy through three major efforts to achieve the desired end states and prepare our Airmen and installations for the upcoming fight. Collectively, these strategic efforts provide the CE Enterprise with unity of direction for achieving national and Air Force strategic goals.

The below campaign plans each contain distinct lines of effort and objectives designed to meet our mid-term and long-term strategic goals. CE Enterprise Governance will conduct oversight on the progress of strategy implementation. Every Airman Engineer shares responsibility in helping operationalize these concepts.

### REVITALIZE CIVIL ENGINEERING SQUADRONS (RCES) INITIATIVE

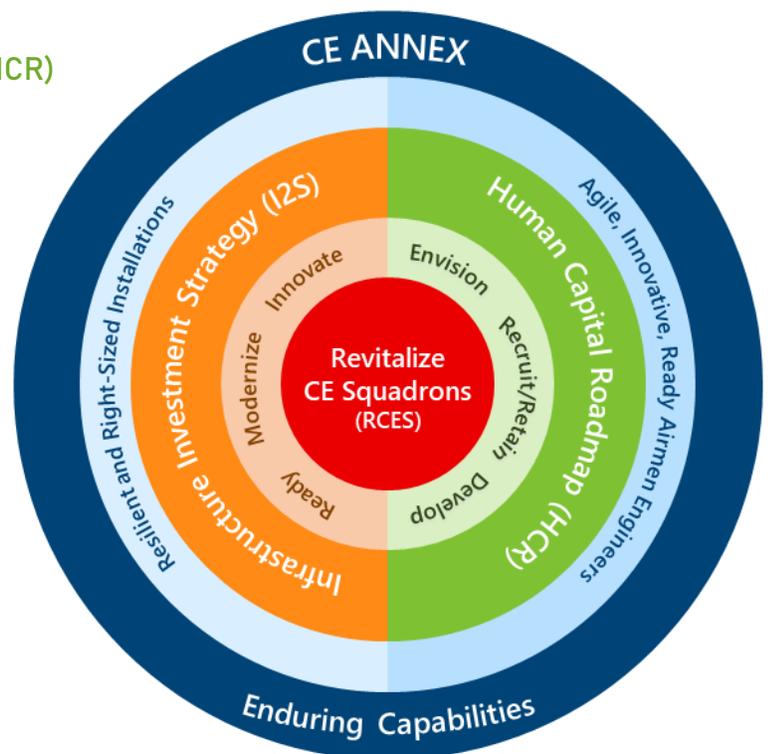
The intent of the RCES Campaign Plan is to revitalize a culture of agility, responsiveness, efficiency, and a warfighter ethos at the squadron level. RCES refocuses on full spectrum readiness and prioritizes improving technical competencies to better support installations and improve squadron level contingency skills. The RCES Campaign Plan reinstates Readiness Challenge, restores Base Recovery After Attack (BRAAT) capabilities, and closes gaps in CE readiness to prepare our squadrons for the near-peer strategic competition environment. RCES will provide Airmen Engineers the tools, training, and opportunity to develop full spectrum readiness.

### INFRASTRUCTURE INVESTMENT STRATEGY (I2S)

The intent of the I2S Campaign Plan is to guide infrastructure requirements development and investment in a way that restores readiness to our power projection platforms, cost effectively modernizes our infrastructure, and injects innovation into our installation management practices. The I2S Campaign Plan is designed to significantly improve the condition of our bases over a 20-30 year period by operationalizing asset management principles at the squadron level, shifting our investment strategy from 'worst first' to a mission-based, lifecycle-cost approach, and increasing our infrastructure budget to a minimum of 2% of Plant Replacement Value. The I2S will provide installations with the tools, resources, manpower, and training needed to ensure mission resiliency and preserve our power projection advantage.

### CIVIL ENGINEER HUMAN CAPITAL ROADMAP (HCR)

The intent of the HCR is to develop agile, innovative, and ready Airmen Engineers by envisioning, recruiting, retaining, and developing talent. The HCR Campaign Plan outlines the professional military education (PME), talent management, and civilian workforce expertise necessary to grow the capabilities and proficiencies of the Total Force Officer, Enlisted, and Civilian career fields. The HCR will provide Airmen Engineers with the resources and cultivate workforce talent and develop leaders to ensure warfighting success.



## ► THE IMPORTANCE OF ASSET MANAGEMENT

CE is committed to incorporating asset management principles into CE business processes, and in demonstrating responsible stewardship of every dollar invested. This includes investments in infrastructure, as well as the time, training, and tools our Airmen use to conduct maintenance, develop requirements, and make resourcing decisions. CE intends to develop and grow a culture of effective, risk-based, mission-focused decision-making through education, training, professional development, and leadership support at all levels.

We have made significant progress since our asset management journey began in 2007, but we have further to go in maturing our processes, skills, and mindset. The CE enterprise will develop additional directive and non-directive guidance as necessary to clarify what is expected of the organization at all levels. The Air Force Installation and Mission Support Center (AFIMSC) will develop a Strategic Asset Management Plan (SAMP) to communicate the overarching strategy to operationalize asset management in all levels of our enterprise. This document will translate organizational objectives, as defined by Enterprise Strategies and Campaign Plans, to asset management objectives. The SAMP will be the catalyst to refine the Asset Management System (AMS), which embodies CE business processes in accordance with Air Force policies and influenced by industry best practices (i.e. International Standards Organization 55000), to achieve the aforementioned asset management objectives.

The SAMP will also establish a common lexicon and describe how the asset management system will support the ability of the organization to:

- make data-driven decisions for infrastructure business management
- restore capability, competence, and manpower in our squadrons to provide adequate and stable resources to meet mission requirements
- optimize installation investment to operate and maintain installation infrastructure
- balance performance and cost given a target level of service and designated level of risk

The asset management principles for the CE Enterprise, in their simplest form, are to:

- incorporate **asset visibility** data collection into maintenance activities
- understand **asset value** to the mission
- manage **risk** to an acceptable level
- optimize **performance** (or achieve Level of Service)
- minimize **life-cycle cost** to the extent possible

### 4 Questions of Asset Management

- What assets do you **have**?
- What **condition** are your assets in?
- What **mission requirement** does the asset help fulfill?
- What are you **going to do** about it?

Organizing, training, and equipping squadrons to apply asset management principles using reliable data will result in optimum investment decisions. To truly operationalize asset management, we must enable our squadrons to develop the critical thinking and analytical skills to make effective decisions at the lowest possible level. Intermediate staff functions should be designed to facilitate and support sound investment decisions at the squadron level with the goal of continuing to decentralize decision-making authority as the squadrons mature. Our ability to use these skills to solve problems must become a core institutional discipline for all Airmen Engineers.

## CONCLUSION

In order to execute this strategy, we must creatively plan for high-end conflict, purposefully invest in our Airmen and installations, and drive forward with a unified effort across our enterprise. This is not a reinvention of the wheel but more so a realignment of our long-held values to enable readiness for the future fight.

Throughout our history, Airmen Engineers have been known for leading the way. This strategy ensures the Airmen Engineers of tomorrow are equipped to do the same.



ENGINEERS...LEAD THE WAY!