LEGISLATIVE APPROPRIATIONS REQUEST

For Fiscal Years 2022 and 2023

Submitted to the
Governor's Office of Budget, Planning and Policy
and the Legislative Budget Board

by

Texas A&M Engineering Experiment Station

September 18, 2020

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For the schedules identified below, the Texas A&M Engineering Experiment Station either has no information to report or the schedule is not applicable. Accordingly, these schedules have been excluded from the TEES Legislative Appropriations Request for the 2022-2023 biennium.

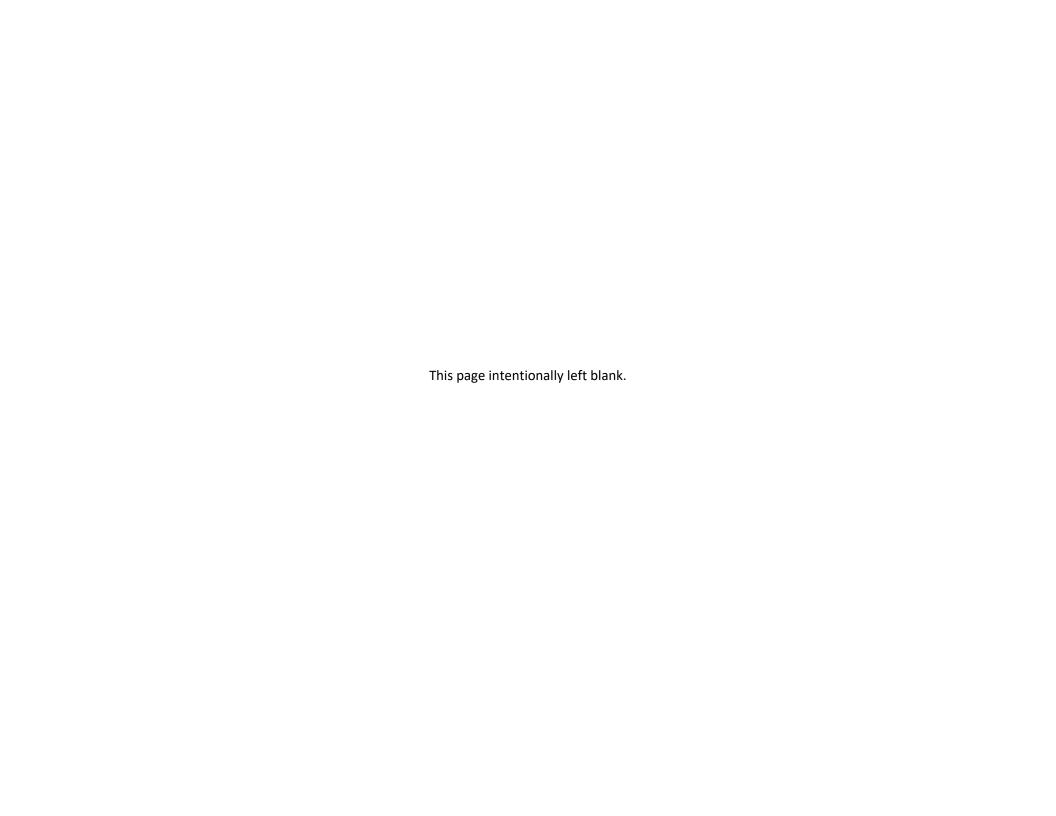| Number	Name
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CERTIFICATE

Agency Name Texas A&M Engineering Experiment Station (TEES)

This is to certify that the information contained in the agency Legislative Appropriations Request filed with the Legislative Budget Board (LBB) and the Governor's Office Budget Division (Governor's Office) is accurate to the best of my knowledge and that the electronic submission to the LBB via the Automated Budget and Evaluation System of Texas (ABEST) and the PDF file submitted via the LBB Document Submission application are identical.

Additionally, should it become likely at any time that unexpended balances will accrue for any account, the LBB and the Governor's Office will be notified in writing in accordance with Article IX, Section 7.01 (2020-21 GAA).

Chief Executive Officer or Presiding Judge

M. K. Banks
Signature

M. Katherine Banks
Printed Name

Vice Chancellor of Engineering and National Laboratories
Director, Texas A&M Engineering Experiment Station
Title

08/28/2020
Date

Chief Financial Officer

John W. Crawford
Signature

John W. Crawford
Printed Name

Chief Financial Officer, TEES
Title

8/28/2020
Date

Board or Commission Chair

Elaine Mendoza
Signature

Elaine Mendoza
Printed Name

Chairman - Board of Regents
Title

9/11/2020
Date

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Texas A&M Engineering Experiment Station (TEES) was established by the Legislature in 1914 and incorporated within The Texas A&M University System (TAMUS) in 1948. For more than a century, TEES is a vital institution of higher education. The TEES mission, defined as a Texas state agency (Section 88, Subchapter E, Texas Education Code), is to: (1) perform quality research to address the needs of our evolving society; (2) transfer emerging technology to private industry; and (3) support the state's workforce development through continuing and professional education.

TEES headquarters in College Station maintains 19 regional divisions in partnership with other institutions of higher education across Texas, including local community colleges. These regional divisions include all universities within TAMUS, as well as these external entities: Angelo State University, Blinn College, Del Mar College, Lamar University, New Mexico State University, Texas State University, Texas Women's University, and University of North Texas. Through these partnerships, TEES is a catalyst for leveraging collaborations that position the state to be especially competitive for federal funding while providing a platform for strengthening research capabilities. In the Research heading below, there are many examples of successful leadership with multi-institutional research initiatives.

As the state's leader in innovation engineering, TEES enables government and industry partners to deliver advanced technology solutions in critical disciplines: energy systems and services; healthcare; information systems and sensors; infrastructure; materials and manufacturing; and national security and safety. By leveraging capabilities statewide, TEES can: (1) improve economic development and quality of life in Texas and the nation; (2) support interdisciplinary fundamental and applied research; (3) transfer technology from research and development activities to useful applications; and (4) enhance the positive impact of the state's educational systems.

Thanks to General Revenue (GR) appropriations from the state, TEES is able to compete for external research awards. TEES successfully leverages GR by attracting $15 for every $1. By allocating base funding from the state to support research programs and new initiatives, TEES has maintained decades of successful partnerships and is currently involved in over 1,300 active research projects. The majority of external research dollars generated by TEES continues to come from federal sponsors, including major initiatives with the following entities: National Science Foundation; U.S. Department of Defense; U.S. Department of Energy; National Institutes of Health; and National Aeronautics and Space Administration. Research funding from the private sector has also remained strong, through sponsored contracts and established research centers, which serve to advance a broad range of industries in Texas: aerospace; transportation; energy; national security; oil and gas; manufacturing; materials; chemical processing; and healthcare.

Budget Reductions

TEES recognizes that the state faces a significant budget deficit and economic uncertainty. However, TEES can provide the state opportunities to advance economic goals and improve the competitiveness of the state. A 5% budget reduction in GR and GR–Dedicated funds detrimentally interferes with the agency's ability to meet its mission-critical obligations for Texas. The past year has seen TEES increase its research activity associated with national security, including large initiatives with the Army Research Laboratory and Army Futures Command. In the past few months, TEES has been participating in COVID-19 research activities. Due to the nature of this research, these areas cannot be targeted for a budget reduction

After a holistic review of the agency's portfolio – both research and workforce development professional training activities – there was a limited area to target for required reductions. TEES had to look at the overall return on investment for the state from additional research funding, workforce development training, and technology commercialization opportunities. Based on this analysis, TEES has determined the budget reduction will be on three separate programs: (1) U.S. Army Futures Command (AFC), originally appropriated to Office of the Governor (OOG) and transferred to TEES; (2) Nuclear Power Institute (NPI); and (3) the Energy Systems Laboratory (ESL). The budget reduction impact on these programs are described below, as well as what it means to the citizens of Texas.

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Pursuant to Article I, Rider 37, $50 million was appropriated by the Texas Legislature to OOG and then transferred to TEES in December 2019. It is one of multiple funding sources dedicated to support a partnership between the state of Texas and AFC for a modernization mission that is inclusive of academia-based research as well as private sector-based commercialization. This investment by the Texas Legislature has been critical for countering efforts luring AFC to instead engage with institutions of higher education and private industry in other states. Any reduction to these amounts – especially establishing an "Innovation Proving Ground" (IPG) as part of the George H.W. Bush Combat Development Complex (BCDC) at Texas A&M System RELLIS Campus – will likely result in a fractured partnership, which may ultimately leave the state as not fully benefiting from future investments by Department of Defense.

Last session, a GR increase of $1.5 million was appropriated for NPI. In order to best utilize the increased funding, NPI underwent a reorganization and conducted an industry sector needs-assessment to address the rider language, specifically on the goal "to sustain a new clean industry in Texas." The analysis identified areas related to manufacturing processes as a best course of action to efficiently operate NPI programs. The budget reduction will require TEES to make significant cuts in these programs, especially delivering its workforce development professional training partnerships with community colleges and K-12 public school districts. Ultimately, this reduction will scale-back delivering critically-needed training in identified areas related to clean industry manufacturing.

Senate Bill 5, in 2001, mandated ESL to participate in the implementation of state energy standards by calculating emissions reduction benefits from efficiency and renewable initiatives. ESL already faces challenges – primarily because of previous funding cuts made by the 82nd Legislature – to meet its statutory responsibilities and support functions for the State Energy Conservation Office (SECO). Therefore, a further reduction in funding would be detrimental to the timeliness of which ESL completes its projects and its support of state organizations in their respective abilities to comply with emission standards.

Exceptional Item Requests

Restore the FY 2020 Five Percent Reduction to Article I, Rider 37 - U.S. Army Futures Command

Requested Amount: $2.5 million

TEES will incur additional expenses to modify the pre-construction planning, as well as other related services already invested for establishing and equipping an IPG, by reducing $2.5 million of the project scope.

Critical Need in Manufacturing Workforce Development

Requested Amount: $5 million/Biennium

Texas is the 10th largest economy in the world; its manufacturing industry is the second largest in the United States. Manufacturing in Texas accounts for 10% of U.S. manufacturing GDP and contributes over 13% of total output in the state, employing 7% of the workforce with close to one million employees working at over 25,000 manufacturing firms. Additionally, Texas is home to the 2nd largest number of military installations in the nation with over 19,000 defense contractors located in 87% of the counties in the state.

Manufacturing in Texas is facing a disruptive shift to evolve, thrive, and grow with the introduction of emerging smart advanced manufacturing technologies such as 3D

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printing, collaborative robotics, artificial intelligence, and cybersecurity. Smart manufacturing technologies allow for a secure and resilient future for Texas manufacturing and enable competitive growth of on-shore manufacturing trusted for national defense.

Texas finds itself at a critical juncture to keep pace with both the emerging technologies of smart manufacturing and also the skilled workforce to enable it. The Texas manufacturing economy must realize the potential promise, application, and reward of digital technologies that can only be achieved by developing the necessary workforce to sustain the job needs in Texas through a skilled talent pipeline that remains agile and responsive. This talent pipeline must be capable of the continuous, value-added execution that digital manufacturing enables to fully achieve resilience to fluctuations in employment demand due to state and national crises (Hurricane Harvey, COVID-19, 2020 Oil Markets).

This proposal aims to address the detrimental impact on Texas' manufacturing economy due to COVID-19 and provide key support towards securing the future by aligning the program with federal requirements that include the Departments of Defense, Energy, and Commerce with the Texas Higher Education Coordinating Board (THECB) 60x30TX Plan (part of the Governor's Tri-Agency Task Force, along with Texas Workforce Commission and Texas Education Agency) via training 25 to 34-year-old Texans and displaced workers.

This program will empower a secure and resilient approach to Industry 4.0 smart manufacturing environments through our three-step approach over three years (FY21-FY23):
1. Develop Content - Develop specialized manufacturing certificate program curricula (technician, engineer, management, and executive) based on industry demands for marketable skills, in smart secure and resilient manufacturing. A variety of course delivery methods will be used that include face-to-face, distance learning (online), or a blended version of both approaches.
2. Establish Trainers - Create a trained Texas network of certified instructors by training partner community college faculty and professional adjuncts to become TEES Emerging Technology Training Professionals (ETTP), for delivering the certificate programs across 12 state regions which will include certification and professional development and continuing education (PCE).
3. Issue Credentials - Award federal / state aligned and industry recognized professional training certificates in high-need, high-growth manufacturing industries to individuals completing the train-the-trainer programs as well as to individuals trained by certified instructors and educational partners.

This program will address Texas' future talent-related opportunities and challenges by encouraging individuals to seek change, rather than resist it. This is especially true as Texas manufacturing roles evolve from focusing on routine processes and tasks, to educating and retraining workers in new skill sets that focus on innovating as well as problem solving for unlocking new forms of economic value. The program outcomes, shown in attached Figure 1, employ a train-the-trainer model which allows for state-wide impact through a significant multiplier effect by targeting 2,500 certificate awardees by 2023.

Research

Applied engineering research and development, a vital part of the agency's mission, makes life better for citizens. In the quest for answers, TEES supports research that strengthens the economic base of Texas through engineering and technology and collaboration with industry. Our goal is to produce and transfer the highest quality, relevant engineering and technology-oriented research.

In October 2019, AFC and TAMUS announced a cooperative agreement that will provide up to $65 million over five years to TEES for research into new technologies to help AFC modernize the nation's fighting force. This includes the implementation of a plan, already underway, for a $142 million combat development complex – formally

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titled, the George H.W. Bush Combat Development Complex (BCDC) – at the RELLIS Campus in Bryan. This investment is comprised of $50 million from the Texas Legislature, appropriated during the 2019 session, for establishing an "Innovation Proving Ground" and $92 million from TAMUS for constructing a "Research Innovation Center."

BCDC will help develop prototypes for defense-related hypersonics and directed energy in a one-of-a-kind, kilometer-long tunnel. It will have laboratories, runways, underground and open-air battlefields as well as a resilient network of sensors and systems for data collection, analysis and storage. AFC has tasked TEES researchers to focus hypersonic and laser weaponry; materials for withstanding hypervelocity blasts; coordinated maneuvering of air and ground vehicles; and resilient computer networks for autonomous vehicles to share up-to-the-moment battlefield information.

TAMUS is a partner in Triad National Security LLC, specifically TEES, which is managing Los Alamos National Laboratory (LANL) in New Mexico. The two other Triad partners are University of California System and Battelle Memorial Institute. LANL is the premier nuclear security asset in the world. TEES, on behalf of TAMUS, is committed to working with our partners to enhance safety and security at LANL while advancing its world-class science and successfully ensuring its vital missions. TEES contributions to the Triad team includes subject matter expertise in nuclear engineering, criticality safety and workforce development, all of which are crucial to the future of LANL.

Consolidated Nuclear Security (CNS) asked TEES to collaborate on emerging technology research and development, as well as educational and professional development opportunities at their Pantex Plant near Amarillo, which is the primary facility for final assembly or dismantlement and maintenance of our nation's nuclear weapons program. The Pantex Plant is operated by CNS, under a contractual agreement with DOE National Nuclear Security Administration (NNSA), and is one of the Panhandle region's largest employers with almost 4,000 employees. The research focus will address areas of mutual interest and mission-critical challenges, as well as serve as an incubator for new ideas in developing technical approaches to national defense. The workforce development activities will help address a growing shortage of skilled workers in the nuclear weapons industry by providing workforce development training at Pantex, as well as Science, Technology, Engineering and Math (STEM) outreach programming to local public school districts.

TEES was selected for an award from NASA to lead research into commercially viable, civil-supersonic transport aircraft that meet noise and efficiency requirements for overland flight. Their research is on designing an aircraft that can modify its shape in real-time, in order to optimize for fuel efficiency or quiet flight as phases and conditions change. The team is one of five transformative, system-level aviation innovations that NASA has selected as part of their Aeronautics' University Leadership Initiative (ULI). In June 2018, a major forum in College Station, organized by U.S. Air Force and attended by then Air Force Secretary Heather Wilson, featured this capability at TEES.

State statute (Section 252, Chapter 386, Texas Health and Safety Code) establishes that ESL shall provide technical expertise in the area of calculating and verifying energy savings, as well as air emission reductions from energy efficiency programs. ELS also provides technical assistance on the statewide building energy code, collaborating with SECO in the Comptroller's Office, to ensure maximum savings for state and local governments per mandates established under the U.S. Clean Air Act. Limited funding for these responsibilities comes from Texas Emissions Reduction Plan (TERP) Fund and related GR appropriations from the Legislature has been consistently reduced each biennium, which adversely impacts the ability to provide legally obligated services. At a minimum, previous levels of GR appropriations to TEES for ESL from TERP would be very beneficial in fulfilling all statutory assignments.

Emerging Technology Transfer

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Cutting edge and world class research is conducted at TEES across 14 engineering divisions and 25 Research Centers. The goal is to catalyze translation of discoveries and inventions arising from this major research portfolio towards products and services that benefit society, while creating sustainable businesses or commercial value.

TEES Commercialization and Entrepreneurship division collaborates closely with researchers to enable six activities: (1) Creation of intellectual property (IP), (2) Licensing of IP, (3) Enhancing the industry sponsored research portfolio, (4) Launching startup ventures from inventions, (5) Build innovation ecosystem statewide, and (6) Entrepreneurship training through bootcamps and workshops.

TEES has been successfully increasing the overall IP and new venture generation from research projects over the last five years (2014-2019). This includes: (1) an 85 percent increase since 2014 and 45 percent increase since 2018 in the number of invention disclosures per year, (2) a 120 percent increase in the number of provisional patent applications since 2014 and 6 percent increase since 2018, and (3) a 98 percent increase in the number of Utility/PCT patent applications since 2014 and 35% increase since 2018.

TEES plays an active role in building a statewide deep technology commercialization ecosystem based on IP. Between 2014-2019, 30 start-up companies were formed. TEES also conducts the annual Texas A&M New Ventures Competition (http://www.texasnvc.org/), at which more than 400 Science and Engineering based start-up companies across Texas have participated and more than 120 companies have received coaching, presented their technologies, met investors, and competed for monetary prizes from private sources. Now in its sixth year, TNVC has awarded over $1.5 million to those Texas based companies.

Workforce Development

TEES utilizes its statewide mission and reach to support the workforce through education and training pathways, focusing on high-technology areas. The Agency provides training for both industries and public entities at all stages of life. TEES education and training programs are focused in the three areas: (1) Pre- Kindergarten through 12th Grade (PK-12) engineering education outreach; (2) Institutional partnerships (2-year colleges); (3) Professional and continuing education.

TEES SPARK!, PK-12 Engineering Education Outreach, provides programs for elementary, middle and high school students, teachers, and families to help encourage the mindset towards a pathway in engineering and STEM careers. Over the past year, SPARK! has reached over 15,000 students and 9,000 educators through the deployment of a Mobile Makerspace trailer (Maker U™), teacher professional development programs, and as host of several competitions. SPARK! provides programs that target rural, suburban and urban communities.

Through the Maker U™ Program, schools and teachers are provided programmatic opportunities to inspire future engineering students with indelible experiences that will help them develop their passion for solving problems, inspire innovation and creativity, and strengthen communication skills. SPARK! designed custom professional training that is delivered on-site. This program has reached teachers who are unable to travel because of time or cost. The team has trained entire schools on how to incorporate math, science, and technology to solve engineering problems.

In addition to regional outreach, through the Mobile Makerspace and Maker U™, TEES continues to provide various summer programs for students. Examples include Bioforce, a summer camp that introduces students to the therapeutics manufacturing industry; Raised3D, an engineering design system and additive manufacturing camp; and NPI, which provides elementary and secondary school students a better understanding of careers in clean energy fields.

Finally, EDGE delivers workforce development programs, including certifications, to prepare entry-level employees, displaced workers, veterans transitioning from active

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duty, or unrepresented populations as well as those from economically disadvantaged areas. Through training programs targeting critical needs in fields that enable emerging technology, TEES collaborates with educational and industry partners to develop and deliver certificate programs designed to create a workforce with next generation of skills.

COVID-19 Pandemic Response

TEES is a major component of the state's response to COVID-19. As part of the Governor's Texas Supply Chain Strikeforce, TEES provides several support services for the Texas Division of Emergency Management (TDEM). Specifically, TEES provided research engineers to inspect various Personal Protective Equipment (PPE) in the state's stockpile prior to those items being deployed to hospitals and nursing facilities around Texas. Additionally, TEES engineers trained Texas National Guardsmen on how to perform inspections of the stockpile. Finally, when the Governor commissioned Prestige Ameritech Ltd. to help increase the state's PPE stockpile by manufacturing N-95 masks, TEES entered into a service contract with Prestige Ameritech to perform engineering consulting services which helped expand the company's capacity for producing the masks.

In addition, a TEES Procurement Officer has been assigned to the Governor's Supply Chain Strikeforce for processing all procurement tasks approved by TDEM. Specifically, this support service from TEES to TDEM includes securing all bids and submitting every order for the state's PPE stockpile. Ultimately, a large majority of all PPE that is coming through the state's warehouses is actually procured by TEES Procurement Office on behalf of TDEM.

TEES has fully executed eight service contracts with hospitals across Texas for the purpose of producing mass quantities of PPE and delivering those items to these hospitals. TEES utilized its existing equipment, such as 3-D printers, and repurposed those resources to help produce PPE under these service agreements. Specifically, since March 2020, TEES has provided the following equipment to those hospitals: 5,000 face shields, 550 mask comfort straps, 400 inhaler diffusers, and 5 isolation chambers. Hospitals are using these items, produced using 3-D printing technologies and other existing equipment to rapidly manufacture, for treating patients suffering from COVID-19.

Since March 2020, roughly 12% of the agency's research efforts have continued operating as "essential" to our state and country. This essential research activity, valued at approximately $22 million annually, includes research in response to state and national needs, specifically for COVID-19 research, conducted at various campus laboratories. Since the outbreak of the pandemic, TEES has submitted 38 proposals, primarily to federal agencies, for research funding related to COVID-19. To date, the Agency has been awarded 12 contracts valued at over $14 million.

Texas A&M University System Issues

We recognize the difficult financial situation and tough budget decisions that will face the 87th Legislature and will work collaboratively with state leaders to find the support needed for the education, research, and service we provide. A robust higher education sector is key to long term economic growth and resiliency, but increased costs, revenue losses, and budget reductions due to the pandemic have Texas' higher education sector stressed and stretched. With a direct presence in all 254 Texas counties, Texas A&M System Agencies offer research, training, and service to the state's citizens, to improve the social, economic, educational, and health status of Texans. They also play a critical, core role in supporting statewide disaster preparedness and response, from natural disasters such as wildfires and hurricanes to the coronavirus pandemic.

Despite getting no relief from the state's five percent 2020-21 biennial reduction like other agencies that are working on COVID response, our A&M Agencies—in

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particular the Texas A&M Forest Service, Texas A&M Engineering Extension Service, Texas A&M AgriLife Extension, and Texas A&M Veterinary Medical Diagnostic Laboratory—continue to respond to the pandemic daily. On any given day, we have over 1200 employees, plus the employees of TDEM, serving Texas and Texans through their pandemic response work. We request that all the response efforts at the A&M Agencies be recognized as part of the state's emergency response system and be exempted from any continued or future budget reductions. We request continued investment in higher education and the A&M System Agencies to ensure we maintain our ability to serve the people of Texas. Key agency funding issues are detailed below:

Base Funding – Maintaining equitable, reliable, and predictable funding for higher education is critical, including for the A&M System Agencies. Over the last decade, and particularly in response to Hurricane Harvey, the A&M System Agencies have been tapped to help meet Texas' emergency preparedness and response to hurricanes, tornados, flooding, wildfires, and other events, while continuing to fulfill their research and service missions to improve the lives of Texans. Now our state and country are facing the COVID-19 pandemic, and with the addition of the Texas Division of Emergency Management (TDEM) as the eighth agency in the A&M System, the state's disaster response is dependent on all of these service agencies.

Base funding is provided to institutions of higher education by the State through both formula and non-formula support. Formula funding for the academic institutions supports the core instructional, operational, and infrastructure costs at the institutions. As the A&M System agencies, like other sectors of higher education, adapt to the financial hardships of COVID-19, base funding provides critical support for the programs and services our agencies provide to the state. While our agencies do not have an operations formula, they need base funding support similar to the support provided by the operational formulas for the academic and health related institutions. This is important not only to provide stable support for agency core missions in a growing state but also, given the critical public safety role of the agencies, in responding to ongoing state emergencies and the coronavirus pandemic.

Restoration of 5% Reductions – Across the A&M System, the reductions total $84.6 million. These reductions hurt. Our agencies had to cut into the services provided to communities and the state and stressed our resources and employees as we actively responded to hurricanes, wildfires, tornados as well as our significant efforts on behalf of the statewide COVID response. Continuing these reductions into the 2022-23 biennium continue to harm the mission of our agencies and will perpetuate the impacts to Texans.

Higher Education Group Health Insurance – We request funding to cover increases in covered enrollments in our insurance program and in health care costs beyond our control. We also request restoration of the gap in funding for our employees compared to state employees in the ERS group plan.

Background Check Policy

TEES follows Texas Government Code (Chapter 411, Subchapter F) and Texas Education Code (Section 51.215), which provides the statutory authority to conduct criminal background checks. Texas A&M System Regulation 33.99.14 (https://policies.tamus.edu/33-99-14.pdf) addresses the operation of criminal history background checks for members of the Texas A&M System.

2019 Indirect Cost Earnings:
    Indirect Costs Earned on TEES Administered Contracts & Grants $ 23,915,982

Figure 1. Exceptional Item: Critical Need in Manufacturing Workforce Development. TEES' broad-reach approach will enable multiple Texas manufacturing industries to cultivate and maintain a critically skilled, digitally competent and competitiveness workforce. The program outcomes employ a train-the-trainer model which allows for state-wide impact through a significant multiplier effect by targeting 2,500 certificate awardees by 2023:

TEES SUBJECT MATTER EXPERTS create a **UNIQUE TRAIN-THE-TRAINER** model

COMMUNITY COLLEGE faculty complete a **TEES CERTIFICATE PROGRAM** and become **EMERGING TECHNOLOGY TRAINING PROFESSIONALS (ETTPs)**

EMERGING TECHNOLOGY CERTIFICATE training sessions offered in **LOCAL COMMUNITIES** by ETTPs

2,500 Certificates Awarded by 2023

Texas A&M Engineering Experiment Station

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                          │    Chancellor     │
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│ Chief Information │─────│  Agency Director  │─────│  Chief Financial  │
│     Officer       │     │     4.3 FTE       │     │     Officer       │
│    12.6 FTE       │     └──────────────────┘     │     49.0 FTE      │
└──────────────────┘              │                └──────────────────┘
                          ┌──────────────────┐
                          │ Agency Deputy     │
                          │    Director       │
                          │    30.0 FTE       │
                          └──────────────────┘
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| Associate Agency Director for Strategic Initiatives and Centers 102.7 FTE | Associate Agency Director for Local and College of Engineering Divisions 618.0 FTE | Assistant Agency Director for Workforce Development and Regional Divisions 33.0 FTE |

The **TEES Director/CEO** oversees the Texas A&M Engineering Experiment Station (TEES), the state institution of higher education focused on engineering research and development, technical assistance, workforce development and service.

The **Deputy Director** of TEES is responsible for the oversight of the programmatic and non-programmatic research programs of the institution, including research initiatives & centers, workforce development, regional divisions, corporate relations, technology & commercialization and global initiatives.

The **Chief Information Officer** of TEES is responsible for the TEES information systems, as well as all network and other IT related infrastructure. This includes IT security, desktop support and email support.

The **Chief Financial Officer** of TEES is responsible for the oversight and coordination of the financial operations of TEES. This includes all fiscal operations, budgets, payroll and human resources, intellectual property management, and compliance.

The **Associate Agency Director for Strategic Initiatives & Centers** is responsible for the oversight of all TEES Centers & Institutes along with any research initiatives.

The **Associate Agency Director for Local & College of Engineering Divisions** is responsible for the oversight of the relationship between the engineering faculty of Texas A&M University and TEES as well as TEES facilities and space allocation; communications and marketing.

The **Assistant Agency Director for Workforce Development and Regional Divisions** is responsible for all workforce development activities conducted by TEES as well as the oversight of TEES' partnerships with regional institutions that are located at universities and community colleges throughout the state.

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Appropriation Years: 2022-23

	GENERAL REVENUE FUNDS		GR DEDICATED		FEDERAL FUNDS		OTHER FUNDS		ALL FUNDS		EXCEPTIONAL ITEM FUNDS
	2020-21	2022-23	2020-21	2022-23	2020-21	2022-23	2020-21	2022-23	2020-21	2022-23	2022-23
Goal: 1. Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev											
1.1.1. Research Programs	67,212,776	10,030,878	842,767	842,767	103,601,504	136,351,350	79,806,037	84,291,727	251,463,084	231,516,722	2,500,000
1.2.1. Technology Transfer	1,828,844	1,896,006					1,584,188	1,642,364	3,413,032	3,538,370	
1.3.1. Workforce Development	5,029,267	5,219,515			3,814,600	3,954,686			8,843,867	9,174,201	5,000,000
Total, Goal	**74,070,887**	**17,146,399**	**842,767**	**842,767**	**107,416,104**	**140,306,036**	**81,390,225**	**85,934,091**	**263,719,983**	**244,229,293**	**7,500,000**
Goal: 3. Indirect Administration											
3.1.1. Indirect Administration	6,573,808	6,415,222					683,368	1,108,464	7,257,176	7,523,686	
3.1.2. Infrastructure Support	1,672,554						13,971,872		15,644,426		
3.1.3. Center For Infrastructure Renewal	9,603,813	9,600,652							9,603,813	9,600,652	
Total, Goal	**17,850,175**	**16,015,874**					**14,655,240**	**1,108,464**	**32,505,415**	**17,124,338**	
Total, Agency	**91,921,062**	**33,162,273**	**842,767**	**842,767**	**107,416,104**	**140,306,036**	**96,045,465**	**87,042,555**	**296,225,398**	**261,353,631**	**7,500,000**
Total FTEs									**842.4**	**842.4**	**13.0**

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Goal / *Objective* / STRATEGY	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
1 Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev					
1 *Increase Dollar Volume of Sponsored Research*					
1 RESEARCH PROGRAMS	107,880,422	149,481,542	101,981,542	115,758,361	115,758,361
2 *Maintain Invention Disclosure Rate*					
1 TECHNOLOGY TRANSFER	1,790,081	1,706,516	1,706,516	1,769,185	1,769,185
3 *Increase # of Students Ivolved in Engineering Research*					
1 WORKFORCE DEVELOPMENT	4,717,797	4,421,934	4,421,933	4,587,101	4,587,100
TOTAL, GOAL 1	**$114,388,300**	**$155,609,992**	**$108,109,991**	**$122,114,647**	**$122,114,646**
3 Indirect Administration					
1 *Indirect Administration*					
1 INDIRECT ADMINISTRATION	4,016,066	3,628,588	3,628,588	3,761,843	3,761,843
2 INFRASTRUCTURE SUPPORT (1)	7,995,458	7,822,213	7,822,213	0	0
3 CENTER FOR INFRASTRUCTURE RENEWAL	4,798,195	4,801,407	4,802,406	4,798,483	4,802,169

(1) - Formula funded strategies are not requested in 2022-23 because amounts are not determined by institutions.

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712 Texas A&M Engineering Experiment Station

Goal / *Objective* / STRATEGY	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
TOTAL, GOAL 3	$16,809,719	$16,252,208	$16,253,207	$8,560,326	$8,564,012
TOTAL, AGENCY STRATEGY REQUEST	$131,198,019	$171,862,200	$124,363,198	$130,674,973	$130,678,658
TOTAL, AGENCY RIDER APPROPRIATIONS REQUEST*				$0	$0
GRAND TOTAL, AGENCY REQUEST	$131,198,019	$171,862,200	$124,363,198	$130,674,973	$130,678,658

2.A.   Page 2 of 3

712 Texas A&M Engineering Experiment Station

Goal / *Objective* / STRATEGY	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
METHOD OF FINANCING:					
General Revenue Funds:					
1 General Revenue Fund	21,595,283	69,710,032	22,211,030	16,579,294	16,582,979
SUBTOTAL	**$21,595,283**	**$69,710,032**	**$22,211,030**	**$16,579,294**	**$16,582,979**
General Revenue Dedicated Funds:					
5071 Texas Emissions Reduction Plan	443,561	421,384	421,383	421,384	421,383
SUBTOTAL	**$443,561**	**$421,384**	**$421,383**	**$421,384**	**$421,383**
Federal Funds:					
555 Federal Funds	65,582,648	53,708,052	53,708,052	70,153,018	70,153,018
SUBTOTAL	**$65,582,648**	**$53,708,052**	**$53,708,052**	**$70,153,018**	**$70,153,018**
Other Funds:					
777 Interagency Contracts	2,681,818	2,493,167	2,493,168	2,243,850	2,243,851
997 Other Funds, estimated	37,886,527	42,521,383	42,521,383	38,269,245	38,269,245
8089 Indirect Cost Recov, Loc Held, est	3,008,182	3,008,182	3,008,182	3,008,182	3,008,182
SUBTOTAL	**$43,576,527**	**$48,022,732**	**$48,022,733**	**$43,521,277**	**$43,521,278**
TOTAL, METHOD OF FINANCING	**$131,198,019**	**$171,862,200**	**$124,363,198**	**$130,674,973**	**$130,678,658**

*Rider appropriations for the historical years are included in the strategy amounts.

2.A.   Page 3 of 3

| Agency code: | **712** | | Agency name: | **Texas A&M Engineering Experiment Station** | | | |

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
GENERAL REVENUE					
1 General Revenue Fund					
REGULAR APPROPRIATIONS					
Regular Appropriations from MOF Table (2018-19 GAA)	$21,595,283	$0	$0	$0	$0
Comments: Matches Conference Committee Report					
Regular Appropriations from MOF Table (2020-21 GAA)	$0	$23,126,275	$23,127,274	$16,579,294	$16,582,979
Comments: Matches Conference Committee Report					
GOVERNOR'S EMERGENCY/DEFICIENCY GRANT					
Grant from Trusted Programs of the Governor	$0	$50,000,000	$0	$0	$0
Comments: Article I, Rider 37, Army Futures Command					
BASE ADJUSTMENT					
2020-21 Five Percent Required Reduction	$0	$(3,416,243)	$(916,244)	$0	$0
TOTAL, **General Revenue Fund**	**$21,595,283**	**$69,710,032**	**$22,211,030**	**$16,579,294**	**$16,582,979**

| Agency code: | 712 | | Agency name: | **Texas A&M Engineering Experiment Station** | | | |

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
TOTAL, ALL GENERAL REVENUE					
	$21,595,283	**$69,710,032**	**$22,211,030**	**$16,579,294**	**$16,582,979**

GENERAL REVENUE FUND - DEDICATED

5071   GR Dedicated - Texas Emissions Reduction Plan Account No. 5071

REGULAR APPROPRIATIONS

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
Regular Appropriations from MOF Table (2018-19 GAA)					
	$443,561	$0	$0	$0	$0
Regular Appropriations from MOF Table (2020-21 GAA)					
	$0	$443,562	$443,561	$421,384	$421,383
BASE ADJUSTMENT					
2020-21 Five Percent Required Reduction					
	$0	$(22,178)	$(22,178)	$0	$0
TOTAL, GR Dedicated - Texas Emissions Reduction Plan Account No. 5071					
	$443,561	**$421,384**	**$421,383**	**$421,384**	**$421,383**
TOTAL, ALL GENERAL REVENUE FUND - DEDICATED					
	$443,561	**$421,384**	**$421,383**	**$421,384**	**$421,383**
TOTAL, GR & GR-DEDICATED FUNDS					
	$22,038,844	**$70,131,416**	**$22,632,413**	**$17,000,678**	**$17,004,362**

FEDERAL FUNDS

Agency code: 712   Agency name: **Texas A&M Engineering Experiment Station**

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023

FEDERAL FUNDS

555 Federal Funds

REGULAR APPROPRIATIONS

Regular Appropriations from MOF Table (2018-19 GAA)

	$44,977,328	$0	$0	$0	$0

Comments: Matches Conference Committee Report.TEES reports this as federal non-formula grant funds from the following major agencies: DOE, DOD, DHHS, DOT, NASA, NIH and NSF. These funds support sponsored engineering research in critical fields such as biomedical and remote health, information systems and sensors, energy systems and services, materials and manufacturing and national security and safety.

Regular Appropriations from MOF Table (2020-21 GAA)

	$0	$53,708,052	$53,708,052	$70,153,018	$70,153,018

Comments: Matches Conference Committee Report. TEES reports this as federal non-formula grant funds from the following major agencies: DOE, DOD, DHHS, DOT, NASA, NIH and NSF. These funds support sponsored engineering research in critical fields such as biomedical and remote health, information systems and sensors, energy systems and services, materials and manufacturing and national security and safety.

BASE ADJUSTMENT

Revised Receipts

	$20,605,320	$0	$0	$0	$0

Agency code:	712			Agency name:	**Texas A&M Engineering Experiment Station**	

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023

FEDERAL FUNDS

Comments: Revised Receipts. TEES reports the FY19 revised receipts for actual federal funding received is for the following reason(s): Increase in federal awards, particularly from NSF and DOD.

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
TOTAL, Federal Funds	$65,582,648	$53,708,052	$53,708,052	$70,153,018	$70,153,018
TOTAL, ALL FEDERAL FUNDS	$65,582,648	$53,708,052	$53,708,052	$70,153,018	$70,153,018

OTHER FUNDS

777 Interagency Contracts

REGULAR APPROPRIATIONS

Regular Appropriations from MOF Table (2018-19 GAA)

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
	$2,493,167	$0	$0	$0	$0

Comments: Matches Conference Committee Report. The major grants and contracts increases were noted in the federal awards.

Regular Appropriations from MOF Table (2020-21 GAA)

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
	$0	$2,493,167	$2,493,168	$2,243,850	$2,243,851

Comments: Matches Conference Committee Report. The major grants and contracts increases were noted in the federal awards.

BASE ADJUSTMENT

Agency code: **712** Agency name: **Texas A&M Engineering Experiment Station**

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
OTHER FUNDS					
Art. III-226, TAR Rider 6 - Advancements in Water Resource Management (2018-19 GAA)					
	$644,817	$0	$0	$0	$0

Comments: Revised Receipts. FY19 funding over original projection from TAR to TEES per TAR Rider 6.

Revised Receipts					
	$(456,166)	$0	$0	$0	$0

Comments: Revised Receipts. FY19 adjustment reflects the decline in actual funding levels from various interagency contracts under the predicted estimates.

TOTAL, Interagency Contracts					
	$2,681,818	**$2,493,167**	**$2,493,168**	**$2,243,850**	**$2,243,851**

997 Other Funds

REGULAR APPROPRIATIONS

Regular Appropriations from MOF Table (2018-19 GAA)					
	$51,480,165	$0	$0	$0	$0

Comments: Matches Conference Committee Report. These funds are locally held by TEES and represent projected grants and contracts from Industry. TEES's largest sponsors are the energy and manufacturing industries.

Regular Appropriations from MOF Table (2020-21 GAA)					
	$0	$42,521,383	$42,521,383	$38,269,245	$38,269,245

Agency code:	712	Agency name:	**Texas A&M Engineering Experiment Station**			

METHOD OF FINANCING	**Exp 2019**	**Est 2020**	**Bud 2021**	**Req 2022**	**Req 2023**

OTHER FUNDS

BASE ADJUSTMENT

Revised Receipts

	$(13,593,638)	$0	$0	$0	$0

Comments: Revised Receipts. FY19 adjustment reflects actual funding levels from Industry and other contracts.

TOTAL,	**Other Funds**					
		$37,886,527	$42,521,383	$42,521,383	$38,269,245	$38,269,245

8089 Indirect Cost Recovery, Locally Held, estimated

REGULAR APPROPRIATIONS

Regular Appropriations from MOF Table (2018-19 GAA)

	$3,008,182	$0	$0	$0	$0

Comments: Matches Conference Committee Report

Regular Appropriations from MOF Table (2020-21 GAA)

	$0	$3,008,182	$3,008,182	$3,008,182	$3,008,182

Comments: Matches Conference Committee Report

TOTAL,	**Indirect Cost Recovery, Locally Held, estimated**					
		$3,008,182	$3,008,182	$3,008,182	$3,008,182	$3,008,182

Agency code: **712** Agency name: **Texas A&M Engineering Experiment Station**

METHOD OF FINANCING	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
TOTAL, ALL OTHER FUNDS					
	$43,576,527	$48,022,732	$48,022,733	$43,521,277	$43,521,278
GRAND TOTAL	$131,198,019	$171,862,200	$124,363,198	$130,674,973	$130,678,658

FULL-TIME-EQUIVALENT POSITIONS

REGULAR APPROPRIATIONS

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
Regular Appropriations from MOF Table (2018-19 GAA)	842.4	0.0	0.0	0.0	0.0
Regular Appropriations from MOF Table (2020-21 GAA)	0.0	842.4	842.4	842.4	842.4
RIDER APPROPRIATION					
Art IX, Sec 6.10(a)(2), Board or Administrator FTE Adjustment (2018-19 GAA)	7.2	0.0	0.0	0.0	0.0

Comments: The FTE increase is from positions paid on sponsored federal and other funds, not General Revenue.

	Exp 2019	Est 2020	Bud 2021	Req 2022	Req 2023
TOTAL, ADJUSTED FTES	849.6	842.4	842.4	842.4	842.4

NUMBER OF 100% FEDERALLY FUNDED FTEs

87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

712 Texas A&M Engineering Experiment Station

OBJECT OF EXPENSE	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
1001 SALARIES AND WAGES	$47,021,027	$45,113,133	$45,113,133	$48,235,684	$48,235,684
1002 OTHER PERSONNEL COSTS	$9,139,505	$8,806,288	$8,806,288	$9,449,525	$9,449,525
1010 PROFESSIONAL SALARIES	$14,317,611	$13,785,939	$13,785,939	$14,783,354	$14,783,354
2001 PROFESSIONAL FEES AND SERVICES	$2,860,514	$2,707,951	$2,707,951	$2,884,970	$2,884,970
2002 FUELS AND LUBRICANTS	$12,083	$11,422	$11,422	$12,271	$12,271
2003 CONSUMABLE SUPPLIES	$2,399,175	$2,267,917	$2,267,917	$2,435,754	$2,435,754
2004 UTILITIES	$1,440,485	$1,404,859	$1,404,859	$135,026	$135,026
2005 TRAVEL	$3,454,334	$2,080,055	$2,080,055	$3,205,087	$3,205,087
2006 RENT - BUILDING	$4,018,860	$3,905,340	$3,905,340	$789,378	$789,378
2007 RENT - MACHINE AND OTHER	$496,073	$474,360	$474,360	$333,726	$333,726
2008 DEBT SERVICE	$4,798,195	$4,801,407	$4,802,406	$4,798,483	$4,802,169
2009 OTHER OPERATING EXPENSE	$23,951,108	$22,667,531	$22,667,530	$21,239,534	$21,239,533
3001 CLIENT SERVICES	$8,340,580	$7,878,832	$7,878,832	$8,447,093	$8,447,093
4000 GRANTS	$4,488,007	$4,241,764	$4,241,764	$4,553,571	$4,553,571
5000 CAPITAL EXPENDITURES	$4,460,462	$51,715,402	$4,215,402	$9,371,517	$9,371,517
OOE Total (Excluding Riders)	**$131,198,019**	**$171,862,200**	**$124,363,198**	**$130,674,973**	**$130,678,658**
OOE Total (Riders)					
Grand Total	**$131,198,019**	**$171,862,200**	**$124,363,198**	**$130,674,973**	**$130,678,658**

712 Texas A&M Engineering Experiment Station

Goal/ *Objective* / **Outcome**	**Exp 2019**	**Est 2020**	**Bud 2021**	**BL 2022**	**BL 2023**
1 Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev					
1 Increase Dollar Volume of Sponsored Research					
1 Percent Change in Dollar Volume of Sponsored Research					
	1.00%	4.00%	3.00%	3.00%	3.00%
KEY **2 Leverage Ratio of GR Approp to Total Funds (Excl Infrastructure Funds)**					
	14.79	15.00	15.00	15.00	15.00
KEY **3 Dollar Volume of Sponsored Research Expenditures (Millions)**					
	181.00	192.00	185.00	185.00	185.00
2 Maintain Invention Disclosure Rate					
1 Number of Formal Invention Disclosures					
	65.00	65.00	65.00	65.00	65.00
KEY **2 Number of Formal License Agreements**					
	17.00	10.00	10.00	10.00	10.00
3 Increase # of Students Ivolved in Engineering Research					
1 Percent Increase in Number of Students Involved in Research Programs					
	2.00%	2.00%	2.00%	2.00%	2.00%
2 Number of Participants in Workforce Development Courses					
	12,966.00	10,188.00	7,000.00	11,250.00	13,000.00

Agency code: **712**   Agency name: **Texas A&M Engineering Experiment Station**

		2022			2023			Biennium	
Priority	Item	GR and GR/GR Dedicated	All Funds	FTEs	GR and GR Dedicated	All Funds	FTEs	GR and GR Dedicated	All Funds
1	Restore 5% reduction, Rider 37	$2,500,000	$2,500,000		$0	$0		$2,500,000	$2,500,000
2	Crit. Need in Manuf. WD	$2,500,000	$2,500,000	13.0	$2,500,000	$2,500,000	13.0	$5,000,000	$5,000,000
Total, Exceptional Items Request		**$5,000,000**	**$5,000,000**	**13.0**	**$2,500,000**	**$2,500,000**	**13.0**	**$7,500,000**	**$7,500,000**

Method of Financing

General Revenue		$5,000,000	$5,000,000		$2,500,000	$2,500,000		$7,500,000	$7,500,000
General Revenue - Dedicated									
Federal Funds									
Other Funds									
		$5,000,000	**$5,000,000**		**$2,500,000**	**$2,500,000**		**$7,500,000**	**$7,500,000**

Full Time Equivalent Positions   13.0   13.0

Number of 100% Federally Funded FTEs

Goal/*Objective*/**STRATEGY**	**Base**	**Base**	**Exceptional**	**Exceptional**	**Total Request**	**Total Request**
Agency code: **712** Agency name: **Texas A&M Engineering Experiment Station**						
1 Conduct Engineering & Related Research to Enhance Higher Ed & Ec						
1 *Increase Dollar Volume of Sponsored Research*						
1 RESEARCH PROGRAMS	$115,758,361	$115,758,361	$2,500,000	$0	$118,258,361	$115,758,361
2 *Maintain Invention Disclosure Rate*						
1 TECHNOLOGY TRANSFER	1,769,185	1,769,185	0	0	1,769,185	1,769,185
3 *Increase # of Students Ivolved in Engineering Research*						
1 WORKFORCE DEVELOPMENT	4,587,101	4,587,100	2,500,000	2,500,000	7,087,101	7,087,100
TOTAL, GOAL 1	**$122,114,647**	**$122,114,646**	**$5,000,000**	**$2,500,000**	**$127,114,647**	**$124,614,646**
3 Indirect Administration						
1 *Indirect Administration*						
1 INDIRECT ADMINISTRATION	3,761,843	3,761,843	0	0	3,761,843	3,761,843
2 INFRASTRUCTURE SUPPORT	0	0	0	0	0	0
3 CENTER FOR INFRASTRUCTURE RENEWAL	4,798,483	4,802,169	0	0	4,798,483	4,802,169
TOTAL, GOAL 3	**$8,560,326**	**$8,564,012**	**$0**	**$0**	**$8,560,326**	**$8,564,012**
TOTAL, AGENCY STRATEGY REQUEST	**$130,674,973**	**$130,678,658**	**$5,000,000**	**$2,500,000**	**$135,674,973**	**$133,178,658**
TOTAL, AGENCY RIDER APPROPRIATIONS REQUEST						
GRAND TOTAL, AGENCY REQUEST	**$130,674,973**	**$130,678,658**	**$5,000,000**	**$2,500,000**	**$135,674,973**	**$133,178,658**

Agency code: **712**   Agency name: **Texas A&M Engineering Experiment Station**

Goal/*Objective*/**STRATEGY**	**Base**	**Base**	**Exceptional**	**Exceptional**	**Total Request**	**Total Request**
General Revenue Funds:						
1 General Revenue Fund	$16,579,294	$16,582,979	$5,000,000	$2,500,000	$21,579,294	$19,082,979
	$16,579,294	**$16,582,979**	**$5,000,000**	**$2,500,000**	**$21,579,294**	**$19,082,979**
General Revenue Dedicated Funds:						
5071 Texas Emissions Reduction Plan	421,384	421,383	0	0	421,384	421,383
	$421,384	**$421,383**	**$0**	**$0**	**$421,384**	**$421,383**
Federal Funds:						
555 Federal Funds	70,153,018	70,153,018	0	0	70,153,018	70,153,018
	$70,153,018	**$70,153,018**	**$0**	**$0**	**$70,153,018**	**$70,153,018**
Other Funds:						
777 Interagency Contracts	2,243,850	2,243,851	0	0	2,243,850	2,243,851
997 Other Funds, estimated	38,269,245	38,269,245	0	0	38,269,245	38,269,245
8089 Indirect Cost Recov, Loc Held, est	3,008,182	3,008,182	0	0	3,008,182	3,008,182
	$43,521,277	**$43,521,278**	**$0**	**$0**	**$43,521,277**	**$43,521,278**
TOTAL, METHOD OF FINANCING	**$130,674,973**	**$130,678,658**	**$5,000,000**	**$2,500,000**	**$135,674,973**	**$133,178,658**
FULL TIME EQUIVALENT POSITIONS	**842.4**	**842.4**	**13.0**	**13.0**	**855.4**	**855.4**

Agency code: Agency name: **Texas A&M Engineering Experiment Station**

GR Baseline Request Limit = **$33,162,273**

GR-D Baseline Request Limit = **$842,767**

Strategy/Strategy Option/Rider

	2022 Funds				2023 Funds			Biennial Cumulative GR	Biennial Cumulative Ded	
FTEs	**Total**	**GR**	**Ded**	**FTEs**	**Total**	**GR**	**Ded**			**Page #**
Strategy: 1 - 1 - 1	**Research Programs**									
744.8	115,758,361	5,015,439	421,384	744.8	115,758,361	5,015,439	421,383	10,030,878	842,767	_____
Strategy: 1 - 2 - 1	**Technology Transfer**									
14.7	1,769,185	948,003	0	14.7	1,769,185	948,003	0	11,926,884	842,767	_____
Strategy: 1 - 3 - 1	**Workforce Development**									
41.2	4,587,101	2,609,758	0	41.2	4,587,100	2,609,757	0	17,146,399	842,767	_____
Strategy: 3 - 1 - 1	**Indirect Administration**									
41.7	3,761,843	3,207,611	0	41.7	3,761,843	3,207,611	0	23,561,621	842,767	_____
Strategy: 3 - 1 - 3	**Center for Infrastructure Renewal**									
0.0	4,798,483	4,798,483	0	0.0	4,802,169	4,802,169	0	33,162,273	842,767	_____

| **842.4** | | | | **842.4** | | | | ******GR Baseline Request Limit=$33,162,273****** | | |

Excp Item: 1	**Restore 5% Reduction - Army Futures Command (Rider 37)**									
0.0	2,500,000	2,500,000	0	0.0	0	0	0	35,662,273	842,767	_____

Strategy Detail for Excp Item: 1										
Strategy: 1 - 1 - 1	**Research Programs**									
0.0	2,500,000	2,500,000	0	0.0	0	0	0			

Excp Item: 2	**Critical Need in Manufacturing Workforce Development**									
13.0	2,500,000	2,500,000	0	13.0	2,500,000	2,500,000	0	40,662,273	842,767	_____

Strategy Detail for Excp Item: 2										
Strategy: 1 - 3 - 1	**Workforce Development**									
13.0	2,500,000	2,500,000	0	13.0	2,500,000	2,500,000	0			

| **855.4** | **$135,674,973** | **$21,579,294** | **$421,384** | **855.4** | **$133,178,658** | **$19,082,979** | **421,383** | | | |

712 Texas A&M Engineering Experiment Station

GOAL: 1 Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1 Increase Dollar Volume of Sponsored Research

Service Categories:

STRATEGY: 1 Research Programs

Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
Output Measures:						
KEY 1	Dollar Volume Sponsored of Research Awards (Millions)	162.45	171.86	170.00	170.00	170.00
KEY 2	Number of Sponsored Research Projects	1,255.00	1,346.00	1,255.00	1,255.00	1,255.00
3	Number of Peer-reviewed Publications	3,586.00	3,600.00	3,600.00	3,600.00	3,600.00
4	Number of Proposals Submitted	1,540.00	1,570.00	1,570.00	1,570.00	1,570.00
Efficiency Measures:						
1	Research Award Dollars per FTE Researcher (Thousands)	882.09	882.09	882.09	882.09	882.09
2	Proposal Acceptance Ratio	38.00	38.00	38.00	38.00	38.00
Objects of Expense:						
1001	SALARIES AND WAGES	$40,350,337	$38,906,868	$38,906,868	$41,800,117	$41,800,117
1002	OTHER PERSONNEL COSTS	$8,809,840	$8,494,682	$8,494,682	$9,126,375	$9,126,375
1010	PROFESSIONAL SALARIES	$13,527,737	$13,043,803	$13,043,803	$14,013,786	$14,013,786
2001	PROFESSIONAL FEES AND SERVICES	$2,178,512	$2,059,392	$2,059,392	$2,212,535	$2,212,535
2002	FUELS AND LUBRICANTS	$12,083	$11,422	$11,422	$12,271	$12,271
2003	CONSUMABLE SUPPLIES	$2,380,751	$2,250,572	$2,250,572	$2,417,932	$2,417,932
2004	UTILITIES	$123,620	$116,860	$116,860	$125,550	$125,550
2005	TRAVEL	$3,396,383	$2,025,467	$2,025,467	$3,148,470	$3,148,470
2006	RENT - BUILDING	$752,896	$711,728	$711,728	$764,654	$764,654

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
2007	RENT - MACHINE AND OTHER	$310,065	$293,111	$293,111	$314,908	$314,908
2009	OTHER OPERATING EXPENSE	$19,409,190	$18,347,899	$18,347,899	$20,088,804	$20,088,804
3001	CLIENT SERVICES	$7,831,727	$7,403,491	$7,403,491	$7,954,041	$7,954,041
4000	GRANTS	$4,383,496	$4,143,807	$4,143,807	$4,451,955	$4,451,955
5000	CAPITAL EXPENDITURES	$4,413,785	$51,672,440	$4,172,440	$9,326,963	$9,326,963
TOTAL, OBJECT OF EXPENSE		**$107,880,422**	**$149,481,542**	**$101,981,542**	**$115,758,361**	**$115,758,361**

Method of Financing:

1	General Revenue Fund	$8,546,495	$57,356,388	$9,856,388	$5,015,439	$5,015,439
SUBTOTAL, MOF (GENERAL REVENUE FUNDS)		**$8,546,495**	**$57,356,388**	**$9,856,388**	**$5,015,439**	**$5,015,439**

Method of Financing:

5071	Texas Emissions Reduction Plan	$443,561	$421,384	$421,383	$421,384	$421,383
SUBTOTAL, MOF (GENERAL REVENUE FUNDS - DEDICATED)		**$443,561**	**$421,384**	**$421,383**	**$421,384**	**$421,383**

Method of Financing:

555	Federal Funds					
10.025.000	Plant and Animal Disease	$223,116	$181,774	$181,774	$204,145	$204,145
10.310.000	Agriculture Food Research (AFRI)	$149,466	$121,771	$121,771	$136,757	$136,757

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
11.467.000	Hydrometeorological Development	$221,246	$180,251	$180,251	$202,434	$202,434
11.609.000	Measurement and Engineer	$957,602	$780,166	$780,166	$876,178	$876,178
12.000.000	DOD MAINTENANCE	$1,903,840	$1,551,075	$1,551,075	$3,741,960	$3,741,960
12.114.000	Collaborative Research a	$107,027	$87,196	$87,196	$97,927	$97,927
12.300.000	Basic and Applied Scient	$2,903,110	$2,365,188	$2,365,188	$2,656,263	$2,656,263
12.351.000	Combating Wpns of Mass Destruction	$242,356	$197,450	$197,450	$221,749	$221,749
12.420.000	Military Medical Researc	$307,939	$250,880	$250,880	$281,755	$281,755
12.431.000	Basic Scientific Researc	$1,341,685	$1,093,082	$1,093,082	$9,227,603	$9,227,603
12.630.000	Basic, Applied, and Adva	$694,461	$565,783	$565,783	$635,412	$635,412
12.800.000	Air Force Defense Resear	$3,948,510	$3,216,885	$3,216,885	$3,612,775	$3,612,775
12.902.000	Information Security Gra	$97,872	$79,737	$79,737	$89,550	$89,550
12.910.000	Research and Technology	$2,437,177	$1,985,588	$1,985,588	$2,229,947	$2,229,947
15.441.000	Safety and Envir. Enforc Rsch&Data	$1,035,673	$843,772	$843,772	$947,611	$947,611
19.033.000	Global Threat Reduction	$316,579	$257,920	$257,920	$289,661	$289,661
20.108.000	Aviation Research Grants	$157,082	$127,976	$127,976	$143,725	$143,725
20.109.000	Air Transportation Cente	$26,764	$21,805	$21,805	$24,488	$24,488
20.614.000	NHTSA Discretionary Safety Grants	$111,358	$90,724	$90,724	$101,890	$101,890
20.701.000	University Transportation	$290,543	$236,708	$236,708	$265,839	$265,839
20.724.000	CAAP	$25,589	$20,847	$20,847	$23,413	$23,413
20.931.000	Trans. Planning Research & Ed	$36,692	$29,893	$29,893	$33,572	$33,572
43.000.012	NASA Contract	$16,611	$13,533	$13,533	$15,199	$15,199
43.001.000	Aerospace Education Servi	$445,482	$362,938	$362,938	$407,603	$407,603

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
43.002.000	Technology Transfer	$2,251,965	$1,834,695	$1,834,695	$2,060,484	$2,060,484
43.003.000	TEES Project B6830-Exploration	$91,854	$74,834	$74,834	$84,044	$84,044
43.007.000	Space Operations	$68,785	$56,040	$56,040	$62,936	$62,936
43.008.000	TEES Project B5310 - Education	$127,266	$103,685	$103,685	$116,445	$116,445
43.012.000	Space Technology	$126,386	$102,968	$102,968	$115,640	$115,640
47.000.000	NATIONAL SCIENCE FOUNDATI	$376,542	$306,772	$306,772	$344,526	$344,526
47.041.000	Engineering Grants	$13,675,415	$11,186,199	$11,186,199	$12,562,845	$12,562,845
47.049.000	Mathematical and Physical	$1,422,793	$1,159,161	$1,159,161	$1,301,815	$1,301,815
47.050.000	Geosciences	$364,847	$297,244	$297,244	$333,825	$333,825
47.070.000	Computer and Information	$5,159,575	$4,203,549	$4,203,549	$4,720,864	$4,720,864
47.074.000	Biological Sciences	$197,220	$160,677	$160,677	$180,451	$180,451
47.075.000	Social, Behavioral, and	$318,325	$259,342	$259,342	$291,258	$291,258
47.076.000	Education and Human Reso	$1,001,705	$816,097	$816,097	$916,531	$916,531
47.079.000	International Science & Engineering	$71,957	$58,624	$58,624	$65,839	$65,839
77.000.000		$32,394	$26,392	$26,392	$29,640	$29,640
77.008.000	US Nuclear Scholarship & Fellowship	$385,512	$314,080	$314,080	$352,732	$352,732
81.041.000	State Energy Conservation	$272,363	$221,897	$221,897	$249,205	$249,205
81.049.000	OFFICE OF ENERGY RESEARCH	$1,597,931	$1,301,848	$1,301,848	$1,462,061	$1,462,061
81.086.000	Conservation Research and	$798,407	$650,469	$650,469	$730,519	$730,519
81.087.000	Renewable Energy Research	$1,447,991	$1,179,691	$1,179,691	$1,324,871	$1,324,871
81.089.000	Fossil Energy Research an	$1,127,121	$918,275	$918,275	$1,031,283	$1,031,283
81.104.000	Technology Development fo	$83,293	$67,860	$67,860	$76,211	$76,211

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
81.113.000	NONPROLIFERATION & SECURI	$120,134	$97,874	$97,874	$109,919	$109,919
81.117.000	Energy Efficiency	$343,331	$279,715	$279,715	$314,138	$314,138
81.121.000	Nuclear Energy Research, Dev & Demo	$5,864,295	$4,777,691	$4,777,691	$5,365,663	$5,365,663
81.122.000	Elctrcty Dlvry & Rliblty-Stimulus	$1,202,889	$980,003	$980,003	$1,100,609	$1,100,609
81.135.000	ARPA Enrgy Fin Asstnc Prog-Stimulus	$608,245	$495,542	$495,542	$556,527	$556,527
84.305.000	RAND- US Department of Ed	$57,000	$46,439	$46,439	$52,154	$52,154
93.084.000	Prevention/Infectious Diseases	$100,445	$81,833	$81,833	$91,904	$91,904
93.103.000	Food and Drug Administrat	$357,270	$291,071	$291,071	$326,892	$326,892
93.113.000	Biological Response to En	$104,462	$85,106	$85,106	$95,579	$95,579
93.121.000	Oral Diseases and Disorde	$365,492	$297,769	$297,769	$334,414	$334,414
93.173.000	Research Related to Deafn	$53,811	$43,841	$43,841	$49,236	$49,236
93.213.000	Research and Training in	$114,335	$93,150	$93,150	$104,613	$104,613
93.242.000	Mental Health Research Gr	$37,203	$30,310	$30,310	$34,040	$34,040
93.262.000	Occupational Safety and H	$393,599	$320,669	$320,669	$360,132	$360,132
93.286.000	Biomedical Imaging Research	$582,900	$474,894	$474,894	$533,337	$533,337
93.310.000	Trans-NIH Research Support	$749,310	$610,469	$610,469	$685,597	$685,597
93.360.000	Biomedical Adv Rsc & Dev. Authority	$418,263	$340,762	$340,762	$382,698	$382,698
93.393.000	Cancer Cause and Preventi	$116,606	$95,000	$95,000	$106,691	$106,691
93.394.000	Cancer Detection and Diag	$77,376	$63,039	$63,039	$70,797	$70,797
93.399.000	Cancer Control	$11,540	$9,402	$9,402	$10,559	$10,559
93.837.000	Cardiovascular Diseases Research	$26,357	$21,473	$21,473	$24,116	$24,116
93.846.000	Arthritis, Musculoskeleta	$114,167	$93,012	$93,012	$104,459	$104,459

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
93.853.000	Clinical Research Related	$556,174	$453,120	$453,120	$508,883	$508,883
93.855.000	Allergy, Immunology and T	$824,882	$672,038	$672,038	$754,743	$754,743
93.859.000	Biomedical Research and Research Tr	$660,702	$538,280	$538,280	$604,524	$604,524
93.865.000	Child Health & Human Dvlpmt	$1,110	$904	$904	$1,016	$1,016
93.866.000	Aging Research	$56,192	$45,780	$45,780	$51,414	$51,414
97.000.000	Misc Pymnts Dept Of Hmlnd Security	$504,439	$378,471	$378,471	$425,048	$425,048
97.061.000	Centers for Homeland Security	$110,350	$77,678	$77,678	$87,238	$87,238
98.001.000	USAid Asst for Programs Overseas	$51,645	$42,076	$42,076	$47,254	$47,254
CFDA Subtotal, Fund	555	$63,581,951	$51,800,752	$51,800,752	$68,175,675	$68,175,675
SUBTOTAL, MOF (FEDERAL FUNDS)		**$63,581,951**	**$51,800,752**	**$51,800,752**	**$68,175,675**	**$68,175,675**

Method of Financing:

777	Interagency Contracts	$2,681,818	$2,493,167	$2,493,168	$2,243,850	$2,243,851
997	Other Funds, estimated	$32,265,350	$37,065,468	$37,065,468	$37,164,106	$37,164,106
8089	Indirect Cost Recov, Loc Held, est	$361,247	$344,383	$344,383	$2,737,907	$2,737,907
SUBTOTAL, MOF (OTHER FUNDS)		**$35,308,415**	**$39,903,018**	**$39,903,019**	**$42,145,863**	**$42,145,864**

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)					$115,758,361	$115,758,361
TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)		$107,880,422	$149,481,542	$101,981,542	$115,758,361	$115,758,361
FULL TIME EQUIVALENT POSITIONS:		751.1	744.8	744.8	744.8	744.8

STRATEGY DESCRIPTION AND JUSTIFICATION:

In order to fulfill the Legislative mandate to promote engineering and technology research, technology transfer and education throughout Texas, TEES' research activities cover the entire spectrum of technology research and development – from fundamental work in the basic engineering sciences, applied efforts addressing specific industrial and governmental needs, and testing and evaluating products and processes. This strategy includes the formation of industry research consortia and public/private partnerships aimed at resolving critical issues facing the state.

For over 100 years, TEES has performed groundbreaking engineering research and developed technology in areas of strategic importance to the economy and our quality of life including energy systems and services, national security and safety, healthcare, infrastructure, materials and manufacturing, information systems and sensors, technology transfer, education and workforce development. Our comprehensive approach ensures that the industries and agencies can adapt to a changing world. Partnerships are built on a commitment to solve real-world challenges that extend beyond the laboratory. Ultimately, TEES provides the human and technical resources that industries and governments need to create opportunities for leadership in new ideas and engineering innovation.

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 1   Increase Dollar Volume of Sponsored Research   Service Categories:

STRATEGY: 1   Research Programs   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

The tremendous advances made as a result of engineering contributions and technology-related research have left few facets of our everyday lives untouched. Science and engineering research is responsible for advancements in technology that lead to new/improved products and processes that, in turn, lead to economic expansion and a higher standard of living. This need for new technology is accelerated both by the growth of a global economy and the search for solutions to societal problems. The State of Texas is at the forefront of this technology revolution. The support structure at TEES encourages a research approach that is atypical of that found in the traditional higher education setting – one that accommodates, to a larger extent, industry and government needs and that is more applications-based. Industrial research consortia, strong external advisory bodies and links to federal and state funding agencies ensure the relevance of TEES research efforts to real-world needs.

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

STRATEGY BIENNIAL TOTAL - ALL FUNDS		BIENNIAL	EXPLANATION OF BIENNIAL CHANGE	
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)	CHANGE	$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$251,463,084	$231,516,722	$(19,946,362)	$(47,500,000)	TEES received $50 million (less the 5% reduction) in FY 2020 per Rider 37, Army Futures Command.
			$27,553,638	MOF 555 - TEES has experienced an increase in large federally sponsored research awards, predominantly from the Department of Defense for the Army Futures Command cooperative agreement.
			$(19,946,362)	**Total of Explanation of Biennial Change**

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712 Texas A&M Engineering Experiment Station

GOAL: 1 Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 2 Maintain Invention Disclosure Rate
Service Categories:

STRATEGY: 1 Technology Transfer
Service: 21 Income: A.2 Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
Output Measures:						
KEY 1	Number of Patent Applications	93.00	89.00	65.00	65.00	65.00
KEY 2	Number of Industry-sponsored Research Projects	0.00	464.00	210.00	210.00	210.00
Efficiency Measures:						
1	Ratio of Disclosure of Inventions to $1 Million in Research Expends	0.05	0.05	0.05	0.05	0.05
Objects of Expense:						
1001	SALARIES AND WAGES	$841,866	$818,617	$818,617	$848,680	$848,680
1002	OTHER PERSONNEL COSTS	$71,839	$69,855	$69,855	$72,420	$72,420
1010	PROFESSIONAL SALARIES	$186,925	$181,763	$181,763	$188,438	$188,438
2001	PROFESSIONAL FEES AND SERVICES	$581,830	$554,669	$554,669	$575,038	$575,038
2003	CONSUMABLE SUPPLIES	$4,323	$4,121	$4,121	$4,272	$4,272
2004	UTILITIES	$4,043	$3,855	$3,855	$3,996	$3,996
2005	TRAVEL	$16,902	$16,113	$16,113	$16,705	$16,705
2006	RENT - BUILDING	$7,206	$6,870	$6,870	$7,122	$7,122
2007	RENT - MACHINE AND OTHER	$3,996	$3,809	$3,809	$3,949	$3,949
2009	OTHER OPERATING EXPENSE	$51,279	$27,900	$27,900	$28,925	$28,925
3001	CLIENT SERVICES	$19,872	$18,944	$18,944	$19,640	$19,640

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 2   Maintain Invention Disclosure Rate   Service Categories:

STRATEGY: 1   Technology Transfer   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, OBJECT OF EXPENSE		**$1,790,081**	**$1,706,516**	**$1,706,516**	**$1,769,185**	**$1,769,185**
Method of Financing:						
1	General Revenue Fund	$959,200	$914,422	$914,422	$948,003	$948,003
SUBTOTAL, MOF (GENERAL REVENUE FUNDS)		**$959,200**	**$914,422**	**$914,422**	**$948,003**	**$948,003**
Method of Financing:						
997	Other Funds, estimated	$830,881	$792,094	$792,094	$821,182	$821,182
SUBTOTAL, MOF (OTHER FUNDS)		**$830,881**	**$792,094**	**$792,094**	**$821,182**	**$821,182**
TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)					**$1,769,185**	**$1,769,185**
TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)		**$1,790,081**	**$1,706,516**	**$1,706,516**	**$1,769,185**	**$1,769,185**
FULL TIME EQUIVALENT POSITIONS:		**14.8**	**14.7**	**14.7**	**14.7**	**14.7**

STRATEGY DESCRIPTION AND JUSTIFICATION:

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 2   Maintain Invention Disclosure Rate   Service Categories:

STRATEGY: 1   Technology Transfer   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

Cutting-edge research generates substantial payoffs. It creates new products, improves lives, and spurs jobs and economic development through the licensing of research discoveries, and sparks start-up companies. Research experiences also train students so they can hit the ground running when they enter the workforce and become innovators of tomorrow. TEES works closely with Texas industry in generating new jobs and economic activity using established and new partnerships for the development of technologies and intellectual property. TEES activities in this area include industry sponsorship of research projects, licensing and commercialization of research results, industrial research consortia, assistance with technology insertion and testing and evaluation capabilities. Assistance is provided to researchers on intellectual property policies and a system for evaluating, marketing and promoting TEES' research results for commercial application is maintained. Of equal importance is technology transfer in the form of publications of innovative advances in engineering, industrial symposia, seminars and workshops.

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

Technological innovation and commercialization are crucial to the sustained economic growth of our state and nation. The technology transfer component of TEES relates directly to the state's goals of building a foundation for social and economic prosperity and enhancing the productivity of Texas. In particular, TEES is focusing upon the Texas target industry clusters indentified by the Governor's initiative: advanced technologies and manufacturing, aerospace and defense, biotechnology and life sciences, information and computer technology, petroleum refining and chemical products, and energy. Commercialization of higher education research results, whether through patents granted, license agreements executed, or companies started, is an expensive and time-consuming process. TEES will continue to work closely with industry to accelerate the transfer of technology to the commercial marketplace.

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 2   Maintain Invention Disclosure Rate   Service Categories:

STRATEGY: 1   Technology Transfer   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

STRATEGY BIENNIAL TOTAL - ALL FUNDS		BIENNIAL CHANGE	EXPLANATION OF BIENNIAL CHANGE	
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)		$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$3,413,032	$3,538,370	$125,338	$125,338	Increase represents anticipated growth in the Tech Transfer Strategy as a result of further investments by TEES for technology and commercialization.
			$125,338	**Total of Explanation of Biennial Change**

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 3   Increase # of Students Ivolved in Engineering Research   Service Categories:

STRATEGY: 1   Workforce Development   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
Output Measures:						
1	Number of Graduate Student Assistantships	1,062.00	1,083.00	1,083.00	1,083.00	1,083.00
2	Number of Undergraduate Students Employed in Research Activities	645.00	658.00	658.00	658.00	658.00
KEY 3	Number of Students from Underrepresented Groups Participating	31,266.00	25,741.00	21,272.00	21,272.00	21,272.00
Efficiency Measures:						
1	Leverage Ratio of State Dollars to Total Workforce Development Revenue	210.20	134.50	150.00	150.00	150.00
Objects of Expense:						
1001	SALARIES AND WAGES	$2,307,897	$2,206,427	$2,206,427	$2,288,841	$2,288,841
1002	OTHER PERSONNEL COSTS	$167,590	$160,221	$160,221	$166,206	$166,206
1010	PROFESSIONAL SALARIES	$296,994	$283,937	$283,937	$294,542	$294,542
2001	PROFESSIONAL FEES AND SERVICES	$100,172	$93,890	$93,890	$97,397	$97,397
2003	CONSUMABLE SUPPLIES	$13,936	$13,062	$13,062	$13,550	$13,550
2004	UTILITIES	$5,636	$5,282	$5,282	$5,480	$5,480
2005	TRAVEL	$41,049	$38,475	$38,475	$39,912	$39,912
2007	RENT - MACHINE AND OTHER	$15,293	$14,334	$14,334	$14,869	$14,869

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 3   Increase # of Students Ivolved in Engineering Research   Service Categories:

STRATEGY: 1   Workforce Development   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
2009	OTHER OPERATING EXPENSE	$1,209,218	$1,081,413	$1,081,412	$1,121,805	$1,121,804
3001	CLIENT SERVICES	$432,141	$405,041	$405,041	$420,170	$420,170
4000	GRANTS	$104,511	$97,957	$97,957	$101,616	$101,616
5000	CAPITAL EXPENDITURES	$23,360	$21,895	$21,895	$22,713	$22,713
TOTAL, OBJECT OF EXPENSE		**$4,717,797**	**$4,421,934**	**$4,421,933**	**$4,587,101**	**$4,587,100**

Method of Financing:

1	General Revenue Fund	$2,717,100	$2,514,634	$2,514,633	$2,609,758	$2,609,757
SUBTOTAL, MOF (GENERAL REVENUE FUNDS)		**$2,717,100**	**$2,514,634**	**$2,514,633**	**$2,609,758**	**$2,609,757**

Method of Financing:

555	Federal Funds					
12.420.000	Military Medical Researc	$6,541	$6,235	$6,235	$6,464	$6,464
47.041.000	Engineering Grants	$263,294	$251,003	$251,003	$260,221	$260,221
47.070.000	Computer and Information	$98,632	$94,028	$94,028	$97,481	$97,481
47.076.000	Education and Human Reso	$1,632,230	$1,556,034	$1,556,034	$1,613,177	$1,613,177
CFDA Subtotal, Fund 555		$2,000,697	$1,907,300	$1,907,300	$1,977,343	$1,977,343
SUBTOTAL, MOF (FEDERAL FUNDS)		**$2,000,697**	**$1,907,300**	**$1,907,300**	**$1,977,343**	**$1,977,343**

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712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 3   Increase # of Students Ivolved in Engineering Research   Service Categories:

STRATEGY: 1   Workforce Development   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)					$4,587,101	$4,587,100
TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)		$4,717,797	$4,421,934	$4,421,933	$4,587,101	$4,587,100
FULL TIME EQUIVALENT POSITIONS:		41.6	41.2	41.2	41.2	41.2

STRATEGY DESCRIPTION AND JUSTIFICATION:

The TEES active research environment contributes to the recruitment of a new generation of engineers. TEES participates in various programs to interest middle-school and high-school students in science, technology, math and engineering, and to support undergraduate and graduate students in obtaining engineering degrees and participating in research programs. Since Texas faces a growing need for diversity among the professionals in engineering and related fields, many of these programs focus upon, but not limited to, under-represented groups. These activities directly relate to the state's and the agency's education mission and include programs to engage pre-college, undergraduate and graduate students in research activities, to foster partnerships between K-12, two- and four-year institutions, to modify the delivery of engineering curriculum, to increase student retention, to encourage graduate studies, and to interact with industry in these areas.

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

The accelerating pace of industrial and technological developments has created an ever-increasing demand for highly qualified, professional engineers and scientists. Technology has diversified the Texas economy, altered the way in which we live, and allowed information more accessible than ever. However, given its large population, Texas presently lags behind most of its key competitor states in the number of engineering and computer science degrees awarded. Texas must strengthen science, technology, engineering and math (STEM) education at all levels in order to sustain its economic growth and remain competitive in an increasingly global and technology-driven economy. In addition, increases in under-represented group participation are essential at all levels of the engineering profession. Opportunities must be made available for recruiting and retaining a diverse student body into higher education and research.

712 Texas A&M Engineering Experiment Station

GOAL: 1   Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev

OBJECTIVE: 3   Increase # of Students Ivolved in Engineering Research   Service Categories:

STRATEGY: 1   Workforce Development   Service: 21   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

STRATEGY BIENNIAL TOTAL - ALL FUNDS		BIENNIAL	EXPLANATION OF BIENNIAL CHANGE	
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)	CHANGE	$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$8,843,867	$9,174,201	$330,334	$330,334	TEES anticipates increased expenditures in the Workforce Development Strategy as the state recovers from the impact of the COVID-19 pandemic.
			$330,334	**Total of Explanation of Biennial Change**

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712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 1   Indirect Administration   Service: 09   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
Objects of Expense:						
1001	SALARIES AND WAGES	$3,520,927	$3,181,221	$3,181,221	$3,298,046	$3,298,046
1002	OTHER PERSONNEL COSTS	$90,236	$81,530	$81,530	$84,524	$84,524
1010	PROFESSIONAL SALARIES	$305,955	$276,436	$276,436	$286,588	$286,588
2006	RENT - BUILDING	$18,791	$16,978	$16,978	$17,602	$17,602
3001	CLIENT SERVICES	$56,840	$51,356	$51,356	$53,242	$53,242
5000	CAPITAL EXPENDITURES	$23,317	$21,067	$21,067	$21,841	$21,841
TOTAL, OBJECT OF EXPENSE		**$4,016,066**	**$3,628,588**	**$3,628,588**	**$3,761,843**	**$3,761,843**
Method of Financing:						
1	General Revenue Fund	$3,637,896	$3,286,904	$3,286,904	$3,207,611	$3,207,611
SUBTOTAL, MOF (GENERAL REVENUE FUNDS)		**$3,637,896**	**$3,286,904**	**$3,286,904**	**$3,207,611**	**$3,207,611**
Method of Financing:						
997	Other Funds, estimated	$303,146	$273,898	$273,898	$283,957	$283,957
8089	Indirect Cost Recov, Loc Held, est	$75,024	$67,786	$67,786	$270,275	$270,275
SUBTOTAL, MOF (OTHER FUNDS)		**$378,170**	**$341,684**	**$341,684**	**$554,232**	**$554,232**

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712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 1   Indirect Administration   Service: 09   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)					$3,761,843	$3,761,843
TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)		$4,016,066	$3,628,588	$3,628,588	$3,761,843	$3,761,843
FULL TIME EQUIVALENT POSITIONS:		42.1	41.7	41.7	41.7	41.7

STRATEGY DESCRIPTION AND JUSTIFICATION:

This activity is the overall management function for the Texas A&M Engineering Experiment Station and consists of technical direction and related affairs. This function is organized and staffed to provide the greatest inducement to the Engineering faculty and staff to obtain new funding sources as well as to maximum efforts to allocate seed dollars to be used for the greatest benefit to the Texas economy. This administration provides overall management and direction of the affairs of the Texas A&M Engineering Experiment Station in order to achieve the most prolific research endeavor attainable with available resources while emphasizing projects of special benefit to Texas industry, and to manage the service operation so as to make available to the user community the best possible services at the most reasonable cost.

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

712 Texas A&M Engineering Experiment Station

GOAL:	3	Indirect Administration	
OBJECTIVE:	1	Indirect Administration	Service Categories:
STRATEGY:	1	Indirect Administration	Service: 09 Income: A.2 Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

STRATEGY BIENNIAL TOTAL - ALL FUNDS		BIENNIAL	EXPLANATION OF BIENNIAL CHANGE	
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)	CHANGE	$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$7,257,176	$7,523,686	$266,510	$266,510	Modest increases anticipated in non-General Revenue funds for Indirect Administration for sponsored research support as TEES receives increased grant funding from Federal agencies.
			$266,510	**Total of Explanation of Biennial Change**

712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 2   Infrastructure Support   Service: 10   Income: A.2   Age: B.3

					(1)	(1)
CODE	**DESCRIPTION**	**Exp 2019**	**Est 2020**	**Bud 2021**	**BL 2022**	**BL 2023**

Objects of Expense:

Code	Description	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
2003	CONSUMABLE SUPPLIES	$165	$162	$162	$0	$0
2004	UTILITIES	$1,307,186	$1,278,862	$1,278,862	$0	$0
2006	RENT - BUILDING	$3,239,967	$3,169,764	$3,169,764	$0	$0
2007	RENT - MACHINE AND OTHER	$166,719	$163,106	$163,106	$0	$0
2009	OTHER OPERATING EXPENSE	$3,281,421	$3,210,319	$3,210,319	$0	$0
TOTAL, OBJECT OF EXPENSE		**$7,995,458**	**$7,822,213**	**$7,822,213**	**$0**	**$0**

Method of Financing:

1	General Revenue Fund	$936,397	$836,277	$836,277	$0	$0
SUBTOTAL, MOF (GENERAL REVENUE FUNDS)		**$936,397**	**$836,277**	**$836,277**	**$0**	**$0**

Method of Financing:

997	Other Funds, estimated	$4,487,150	$4,389,923	$4,389,923	$0	$0
8089	Indirect Cost Recov, Loc Held, est	$2,571,911	$2,596,013	$2,596,013	$0	$0
SUBTOTAL, MOF (OTHER FUNDS)		**$7,059,061**	**$6,985,936**	**$6,985,936**	**$0**	**$0**

(1) - Formula funded strategies are not requested in 2022-23 because amounts are not determined by institutions.

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712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 2   Infrastructure Support   Service: 10   Income: A.2   Age: B.3

| | | | | (1) | (1) |
CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)					$0	$0
TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)		$7,995,458	$7,822,213	$7,822,213	$0	$0

FULL TIME EQUIVALENT POSITIONS:

STRATEGY DESCRIPTION AND JUSTIFICATION:

To provide funds for infrastructure maintenance and operation needs of the agency in Brazos County.

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

Formula funded Strategies are not requested in 2020-21 because the amounts are not determined by the institutions.

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

| STRATEGY BIENNIAL TOTAL - ALL FUNDS | | BIENNIAL | EXPLANATION OF BIENNIAL CHANGE | |
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)	CHANGE	$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$15,644,426	$0	$(15,644,426)	$(15,644,426)	No funds are being requested - Formula Funding.
			$(15,644,426)	**Total of Explanation of Biennial Change**

(1) - Formula funded strategies are not requested in 2022-23 because amounts are not determined by institutions.

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712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 3   Center for Infrastructure Renewal   Service: 10   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
Objects of Expense:						
2008	DEBT SERVICE	$4,798,195	$4,801,407	$4,802,406	$4,798,483	$4,802,169
	TOTAL, OBJECT OF EXPENSE	**$4,798,195**	**$4,801,407**	**$4,802,406**	**$4,798,483**	**$4,802,169**
Method of Financing:						
1	General Revenue Fund	$4,798,195	$4,801,407	$4,802,406	$4,798,483	$4,802,169
	SUBTOTAL, MOF (GENERAL REVENUE FUNDS)	**$4,798,195**	**$4,801,407**	**$4,802,406**	**$4,798,483**	**$4,802,169**
	TOTAL, METHOD OF FINANCE (INCLUDING RIDERS)				**$4,798,483**	**$4,802,169**
	TOTAL, METHOD OF FINANCE (EXCLUDING RIDERS)	**$4,798,195**	**$4,801,407**	**$4,802,406**	**$4,798,483**	**$4,802,169**

FULL TIME EQUIVALENT POSITIONS:

STRATEGY DESCRIPTION AND JUSTIFICATION:

Funds appropriated and approved in the 87th Legislature will be used for debt service on the Revenue Bonds issued. The joint facility houses the Center for Infrastructure Renewal. This facility replaced a 90 year old laboratory facility used for hydraulic cements and mixtures (Portland cement concrete and related binders/mixtures), the 45 year old McNew Laboratory which houses pavement materials research, the 30 year old large scale structures facility and the Advanced Characterization of Infrastructure Materials Laboratory. This facility promotes the consolidation and coordination of multidisciplinary research and workforce development in the technical areas of materials, transportation, construction, geotechnical, structural and engineering and roadside safety.

712 Texas A&M Engineering Experiment Station

GOAL: 3   Indirect Administration

OBJECTIVE: 1   Indirect Administration   Service Categories:

STRATEGY: 3   Center for Infrastructure Renewal   Service: 10   Income: A.2   Age: B.3

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

EXTERNAL/INTERNAL FACTORS IMPACTING STRATEGY:

With Texas' growing population combined with an aging highway infrastructure, there continues to be a tremendous strain put on the state and nation for further design, construction, rehabilitation and maintenance of our state's and nation's infrastructure. TEES, along with the Texas A&M Transportation Institute (TTI), is heavily involved in research in highway materials and advanced characterization of infrastructure material. As the programs have grown, the facilities that house these programs have been further strained. Currently, existing facilities at TEES and TTI are at or near the bottom when compared to other peer institutions in this area. In order to continue to house our existing programs and provide space for future expansion, TEES and TTI needs a world class facility that will position these agencies to meet the needs of our state and nation and become the preeminent leader in this research discipline.

EXPLANATION OF BIENNIAL CHANGE (includes Rider amounts):

STRATEGY BIENNIAL TOTAL - ALL FUNDS		BIENNIAL	EXPLANATION OF BIENNIAL CHANGE	
Base Spending (Est 2020 + Bud 2021)	Baseline Request (BL 2022 + BL 2023)	CHANGE	$ Amount	Explanation(s) of Amount (must specify MOFs and FTEs)
$9,603,813	$9,600,652	$(3,161)	$(3,161)	Amount represents the change in Debt Service per schedule.
			$(3,161)	**Total of Explanation of Biennial Change**

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SUMMARY TOTALS:

OBJECTS OF EXPENSE:	$131,198,019	$171,862,200	$124,363,198	$130,674,973	$130,678,658
METHODS OF FINANCE (INCLUDING RIDERS):				$130,674,973	$130,678,658
METHODS OF FINANCE (EXCLUDING RIDERS):	$131,198,019	$171,862,200	$124,363,198	$130,674,973	$130,678,658
FULL TIME EQUIVALENT POSITIONS:	849.6	842.4	842.4	842.4	842.4

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Agency Code: 712		Agency: Texas A&M Engineering Experiment Station		Prepared By:	Andy Hinton				
Date: 9/14/2020	Program				Requested	Requested	Biennial Total	Biennial Difference	
Strategy	Strategy Name	Priority	Program Name	Legal Authority	2020-21 Base	2022	2023	2022-23	$	%
1.1.1	Research Programs	1	Develop/Support Research Programs, Centers, Institutes & Initiatives	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page III-241-243	$203,963,084	$115,758,361	$115,758,361	$231,516,722	$27,553,638	13.5%
1.2.1	Technology Transfer	2	Technology Transfer	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page III-241-243	$3,413,032	$1,769,185	$1,769,185	$3,538,370	$125,338	3.7%
1.3.1	Workforce Development	3	Workforce Development	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page III-241-243	$8,843,867	$4,587,101	$4,587,100	$9,174,201	$330,334	3.7%
3.1.3.	Center for Infrastructure Ren	4	Center for Infrastructure Renewal	General Appropriations Act (2020-2021 Biennium) page III-241-243; Rider 5; Texas Constitution, Article 7.18.I.	$9,603,813	$4,798,483	$4,802,169	$9,600,652	($3,161)	0.0%
3.1.2	Infrastructure Support	5	Infrastructure Support	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page III-241-243	$15,644,426	$0	$0	$0	($15,644,426)	-100.0%
1.1.1	Research Programs	6	Grant from Trusteed Programs of the Governor (Rider 37)	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page I-63, Article I, Rider 37	$47,500,000	$0	$0	$0	($47,500,000)	-100.0%
3.1.1	Indirect Administration	7	Indirect Administration	Education Code 61.003, Chapter 88.501; General Appropriations Act (2020-2021 Biennium) page III-241-243	$7,257,176	$3,761,843	$3,761,843	$7,523,686	$266,510	3.7%
1.1.1	Research Programs	8	Restore 5% Reduction - Army Futures Command (Rider 37)	Education Code 61.003, Chapter 88.501; Exceptional Item Request (2022)	$0	$2,500,000	$0	$2,500,000	$2,500,000	
1.3.1	Workforce Development	9	Critical Need in Manufacturing Workforce Development	Education Code 61.003, Chapter 88.501; Exceptional Item Request (2021-2022 Biennium)	$0	$2,500,000	$2,500,000	$5,000,000	$5,000,000	

Program Prioritization: *Indicate the methodology or approach taken by the agency, court, or institution to determine the ranking of each program by priority.*
TEES sets priorities that align with its three programmatic Strategies in the Appropriations Bill. The priorities are consistent with TEES's mission - to perform high impact engineering research driven by real-world problems, strengthen and expand the state's technology workforce through education and training, and partner with industry to develop and commercialize transformational technology. In order to fulfill its mission to the state, it is critical for TEES to receive the continued funding to support the indirect administration and infrastructure necessary to operate in the most effective and efficient manner to serve the demands of its internal and external stakeholders. Furthermore, TEES cannot successfully accomplish its deliverables for the newer programs such as the Center for Infrastructure Renewal and the Cooperative Agreement with the Army Futures Command without the support provided by the state.

Agency code: **712**   Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION	Excp 2022	Excp 2023
	Item Name: Restore 5% Reduction - Army Futures Command (Rider 37)		
	Item Priority: 1		
	IT Component: No		
	Anticipated Out-year Costs: No		
	Involve Contracts > $50,000: Yes		
	Includes Funding for the Following Strategy or Strategies: 01-01-01 Research Programs		

OBJECTS OF EXPENSE:

5000	CAPITAL EXPENDITURES	2,500,000	0
	TOTAL, OBJECT OF EXPENSE	**$2,500,000**	**$0**

METHOD OF FINANCING:

1	General Revenue Fund	2,500,000	0
	TOTAL, METHOD OF FINANCING	**$2,500,000**	**$0**

DESCRIPTION / JUSTIFICATION:

The 86th Texas Legislature appropriated funds in Article I, Trusteed Programs within the Office of the Governor - Rider 37: Transfer to Texas A&M Engineering Experiment Station (TEES) for Army Futures Command (AFC). "Out of amounts appropriated…is $50,000,000 out of General Revenue in fiscal year 2020 which shall be transferred…for the purpose of engaging this state's public institutions of higher education with private sector industries to establish and equip a proving ground site and to commercialize and manufacture critical emerging technologies for infrastructure networks, public safety, and national defense." A $2.5 million reduction in funding will delay the completion of establishing and equipping the "proving ground site," per HB1, resulting in additional expenses for TEES to modify the pre-construction planning and other related services already invested for the "Innovation Proving Ground" (IPG) project prior to notification of the 5 percent reduction.

EXTERNAL/INTERNAL FACTORS:

This partnership between the state of Texas, Texas A&M System/TEES and AFC, as previously described, is in its infancy. Substantial financial commitments have been made by each of the parties. It is imperative that the intention of both the Texas Legislature and the Board of Regents for the Texas A&M System comes to fruition by not reducing their respective full-funding amounts as originally established. Any reduction to these amounts – especially the $50 million appropriated by the Texas Legislature for transfer to TEES, which will establish the IPG as part of the George H.W. Bush Combat Development Complex at the Texas A&M System RELLIS Campus – will likely result in a fractured partnership that may ultimately leave the state of Texas as not fully benefitting from future investments by any DOD military branch. Chief amongst such future investment opportunities by the Department of Defense (DOD) for the state of Texas pertains to U.S. Space Command, of which a site-selection process to establish its new headquarters is currently underway. In June 2020, three Texas cities submitted a self-nomination to the Office of the Assistant Secretary of the Air Force for Installations, Environment and Energy for consideration by the U.S. Air Force site-selection review committee. Texas A&M Engineering has already responded to a request for information from OOG/Texas Military Preparedness Commission regarding material which can assist the state of Texas in its positioning for serious consideration as an ideal partner to support U.S. Space Command initiatives.

4.A. Exceptional Item Request Schedule
87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

DATE: **9/14/2020**
TIME: **10:27:57AM**

Agency code: **712**   Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION	Excp 2022	Excp 2023

PCLS TRACKING KEY:

APPROXIMATE PERCENTAGE OF EXCEPTIONAL ITEM :   100.00%

CONTRACT DESCRIPTION :

The Army Futures Command, TEES, and Texas A&M System have collectively completed the program of requirements process to meet the expectations of the Texas Legislature for the $50M appropriation. $42 million has been committed to the Innovation Proving Grounds (IPG) and the other $8 million with the Ballistics Aero-Optics and Materials Facility (BAM), which is part of the IPG. Significant work and milestones associated with contracted vendors selected for the fabrication of these research facilities and specialized equipment have already transpired.

Agency code: **712**

Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION	Excp 2022	Excp 2023

Item Name:	Critical Need in Manufacturing Workforce Development	
Item Priority:	2	
IT Component:	Yes	
Anticipated Out-year Costs:	No	
Involve Contracts > $50,000:	No	
Includes Funding for the Following Strategy or Strategies:	01-03-01	Workforce Development

OBJECTS OF EXPENSE:

CODE	DESCRIPTION	Excp 2022	Excp 2023
1001	SALARIES AND WAGES	695,000	695,000
1002	OTHER PERSONNEL COSTS	195,000	195,000
1010	PROFESSIONAL SALARIES	110,000	110,000
2001	PROFESSIONAL FEES AND SERVICES	500,000	500,000
2005	TRAVEL	125,000	125,000
2009	OTHER OPERATING EXPENSE	200,000	200,000
5000	CAPITAL EXPENDITURES	675,000	675,000
	TOTAL, OBJECT OF EXPENSE	**$2,500,000**	**$2,500,000**

METHOD OF FINANCING:

		Excp 2022	Excp 2023
1	General Revenue Fund	2,500,000	2,500,000
	TOTAL, METHOD OF FINANCING	**$2,500,000**	**$2,500,000**

FULL-TIME EQUIVALENT POSITIONS (FTE): 13.00 | 13.00

DESCRIPTION / JUSTIFICATION:

This proposal aims to address detrimental impacts on Texas' manufacturing economy attributed to a lack of workforce resilience. The proposed program will align with federal requirements that include the Departments of Defense, Energy and Commerce with the Texas Higher Education Coordinating Board (THECB) 60x30TX Plan. TEES will create and deliver workforce development programs to prepare critical manufacturing workforce currently impacted across four sustainability/competitive domains: (1) Baby Boomer retirements: 36% of Texas workforce will be retiring in large quantities during the next five years. (2) Shortage of qualified labor: 71% of Texas firms report difficulty finding middle-skill employees in engineering, skilled trades, and precision manufacturing. Therefore, more training and education options to move into these positions will create a more competitive state economy. (3) Changing Skillsets: technology and computer skills, problem-solving, and critical thinking are needed for advanced manufacturing. (4) Manufacturing Jobs Misconception: the perception of manufacturing must be changed with a need for emphasis on technical education to reflect their status as high-tech professions with stable and well-paying jobs. TEES plans to address these concerns, which have been further exacerbated by the COVID-19 pandemic, by establishing a relevant and globally competitive Texas manufacturing workforce through two areas of focus: Smart Manufacturing Technology and Cybersecurity in Manufacturing. This program will be delivered as both "train-the-trainee" and "train-the-trainer" models, face-to-face as permitted or via online platforms, to maximize the impact across Texas. TEES can enable multiple Texas manufacturing industries to cultivate and maintain a critically skilled, digitally competent, and competitiveness workforce.

Agency code: **712**   Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION	Excp 2022	Excp 2023

EXTERNAL/INTERNAL FACTORS:

The demands of a 21st century Texas economy depend on a capable manufacturing workforce. However, Texas' response to COVID-19 has uncovered serious manufacturing skills gaps as manufactures performed a hard-pivot to address the global pandemic. Individuals whose jobs have been affected by COVID-19 are looking for new careers. Manufactures are being required to preserve talent. The role of cybersecurity has become essential as a significant operational risk for connected, smart manufacturing, digital supply networks, and entire manufacturing ecosystems. There are real risks that lie at the intersection of cyber and physical infrastructure. The variety and scale of cyber-threats to over 17,000 Texas manufactures – which employ over 880,000 people - have grown considerably in recent years. As the Texas manufacturing ecosystem becomes increasingly digitized, manufactures in the State are at serious risk. Additionally, due to COVID-19, the majority of workers in Texas are using their own devices off location. Increasingly, companies are not equipped to deal with cybersecurity threats in any capacity. A recent study by the National Institute of Standards and Technology (NIST) states that workforce development related to cybersecurity is rooted across a continuum of learning. NIST suggests that this continuum starts with a foundation of awareness, then proceeds through training and education that targets an organization's functional role, such as manufacturing.

Additionally, TEES is working with the Department of Defense (DoD) and Department of Energy (DoE) on their major research and development efforts in leadership roles in six Manufacturing USA Institutes: Advanced Robotics for Manufacturing (ARM), Clean Energy Smart Manufacturing Innovation Institute (CESMII), Manufacturing time Digital (MXD), LIFT, America Makes, and SecureAmerica. TEES will deploy its engagements at the national level to the Texas-based manufacturing communities in need of rapid support.

PCLS TRACKING KEY:

N/A

DESCRIPTION OF IT COMPONENT INCLUDED IN EXCEPTIONAL ITEM:

With this program having an on-line component, the procurement of an on-line hosting and delivery platform is required and will be purchased under this effort. This includes an on-line training portal, on-line hosting and maintenance, laptops and training aids, and manufacturing demonstration aids. For the training that occurs on-site, TEES will provide all the appropriate training aids (computers and manufacturing demonstrations).

IS THIS IT COMPONENT RELATED TO A NEW OR CURRENT PROJECT?

NEW

STATUS:

N/A-New initiative and in planning and request stage.

OUTCOMES:

This program will address Texas' future talent-related opportunities and challenges by encouraging individuals to seek change, rather than resist it. This is especially true as Texas manufacturing roles evolve from focusing on routine processes and tasks, to educating and retraining workers in new skill sets that focus on innovating as well as problem solving for unlocking new forms of economic value. The program outcomes employ a train-the-trainer model, allowing for state-wide impact through a significant multiplier effect. A variety of course delivery methods will be used that include face-to-face, distance learning (online), or a blended version of both approaches. Completion of this program will result in an enhanced Texas workforce through the delivery of skilled workers necessary for Texas to maintain its critical manufacturing competitive and productivity edge.

Agency code: **712** Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION	Excp 2022	Excp 2023

OUTPUTS:

This program will empower a secure and resilient approach to Industry 4.0 smart manufacturing environments through our three-step approach over three years (FY21-FY23):

1) Develop Content: Develop specialized manufacturing certificate program curricula (technician, engineer, management, and executive) based on industry demands for marketable skills in smart secure and resilient advanced manufacturing.

• Advanced Technologies and Manufacturing

• Aerospace and Defense

• Biotechnology and Life Science

• Information and Computer Technology

• Petroleum Refining and Chemical Products

2) Establish Trainers: Create a trained Texas network of certified instructors by training partner community college faculty and professional adjuncts to become TEES Emerging Technology Training Professionals (ETTP), for delivering the certificate programs across the 12 state regions which will include certification and professional development and continuing education (PCE).

3) Issue Credential: Award federal / state aligned and industry recognized professional training certificates in high-need, high-growth manufacturing industries to individuals completing the train-the-trainer programs as well as to individuals trained by certified instructors and educational partners.

TYPE OF PROJECT

Content Management

ALTERNATIVE ANALYSIS

This proposal could be scaled down if a lesser amount of General Revenue is awarded, but the limitation of utilizing existing IT resources would negatively impact TEES' ability to meet the scope of the project and contribute to the goals set forth by the "THECB 60x30TX" strategic plan. A lack of funds for this critical IT component would severely reduce the likelihood of offering up to 2,500 manufacturing certificates by the year 2023.

ESTIMATED IT COST

2020	2021	2022	2023	2024	2025	2026	Total Over Life of Project
$0	$0	$675,000	$675,000	$0	$0	$0	$1,350,000

SCALABILITY

2020	2021	2022	2023	2024	2025	2026	Total Over Life of Project
$0	$0	$0	$0	$0	$0	$0	$0

Agency code: **712**   Agency name:

Texas A&M Engineering Experiment Station

CODE	DESCRIPTION						Excp 2022	Excp 2023

FTE

2020	2021	2022	2023	2024	2025	2026		
0.0	0.0	1.0	1.0	1.0	1.0	1.0		

4.A.   Page 6 of 6

Agency code: **712**   Agency name: **Texas A&M Engineering Experiment Station**

Code Description	Excp 2022	Excp 2023
Item Name: Restore 5% Reduction - Army Futures Command (Rider 37)		
Allocation to Strategy: 1-1-1 Research Programs		
OBJECTS OF EXPENSE:		
5000 CAPITAL EXPENDITURES	2,500,000	0
TOTAL, OBJECT OF EXPENSE	**$2,500,000**	**$0**
METHOD OF FINANCING:		
1 General Revenue Fund	2,500,000	0
TOTAL, METHOD OF FINANCING	**$2,500,000**	**$0**

Agency code:	**712**	Agency name: **Texas A&M Engineering Experiment Station**

Code Description	Excp 2022	Excp 2023
Item Name: Critical Need in Manufacturing Workforce Development		
Allocation to Strategy: 1-3-1 Workforce Development		
STRATEGY IMPACT ON OUTCOME MEASURES:		
2 Number of Participants in Workforce Development Courses	750.00	2,500.00
OBJECTS OF EXPENSE:		
1001 SALARIES AND WAGES	695,000	695,000
1002 OTHER PERSONNEL COSTS	195,000	195,000
1010 PROFESSIONAL SALARIES	110,000	110,000
2001 PROFESSIONAL FEES AND SERVICES	500,000	500,000
2005 TRAVEL	125,000	125,000
2009 OTHER OPERATING EXPENSE	200,000	200,000
5000 CAPITAL EXPENDITURES	675,000	675,000
TOTAL, OBJECT OF EXPENSE	**$2,500,000**	**$2,500,000**
METHOD OF FINANCING:		
1 General Revenue Fund	2,500,000	2,500,000
TOTAL, METHOD OF FINANCING	**$2,500,000**	**$2,500,000**
FULL-TIME EQUIVALENT POSITIONS (FTE):	13.0	13.0

4.C. Exceptional Items Strategy Request
87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

DATE: 9/14/2020
TIME: 10:27:57AM

Agency Code:	**712**	Agency name:	**Texas A&M Engineering Experiment Station**

GOAL:	1	Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev					
OBJECTIVE:	1	Increase Dollar Volume of Sponsored Research	Service Categories:				
STRATEGY:	1	Research Programs	Service: 21	Income:	A.2	Age:	B.3

CODE DESCRIPTION	Excp 2022	Excp 2023
OBJECTS OF EXPENSE:		
5000 CAPITAL EXPENDITURES	2,500,000	0
Total, Objects of Expense	**$2,500,000**	**$0**
METHOD OF FINANCING:		
1 General Revenue Fund	2,500,000	0
Total, Method of Finance	**$2,500,000**	**$0**

EXCEPTIONAL ITEM(S) INCLUDED IN STRATEGY:

Restore 5% Reduction - Army Futures Command (Rider 37)

4.C. Exceptional Items Strategy Request
87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

DATE: 9/14/2020
TIME: 10:27:57AM

Agency Code:	712	Agency name:	**Texas A&M Engineering Experiment Station**

GOAL:	1	Conduct Engineering & Related Research to Enhance Higher Ed & Eco Dev					
OBJECTIVE:	3	Increase # of Students Ivolved in Engineering Research	Service Categories:				
STRATEGY:	1	Workforce Development	Service: 21	Income:	A.2	Age:	B.3

CODE	DESCRIPTION	Excp 2022	Excp 2023
OBJECTS OF EXPENSE:			
1001	SALARIES AND WAGES	695,000	695,000
1002	OTHER PERSONNEL COSTS	195,000	195,000
1010	PROFESSIONAL SALARIES	110,000	110,000
2001	PROFESSIONAL FEES AND SERVICES	500,000	500,000
2005	TRAVEL	125,000	125,000
2009	OTHER OPERATING EXPENSE	200,000	200,000
5000	CAPITAL EXPENDITURES	675,000	675,000
	Total, Objects of Expense	**$2,500,000**	**$2,500,000**
METHOD OF FINANCING:			
1	General Revenue Fund	2,500,000	2,500,000
	Total, Method of Finance	**$2,500,000**	**$2,500,000**
FULL-TIME EQUIVALENT POSITIONS (FTE):		13.0	13.0

EXCEPTIONAL ITEM(S) INCLUDED IN STRATEGY:

Critical Need in Manufacturing Workforce Development

6.A. Historically Underutilized Business Supporting Schedule
87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

Date: **9/14/2020**
Time: **10:27:58AM**

Agency Code: **712**   Agency: **Texas A&M Engineering Experiment Station**

COMPARISON TO STATEWIDE HUB PROCUREMENT GOALS

A. Fiscal Year - HUB Expenditure Information

Statewide HUB Goals	Procurement Category	% Goal	% Actual	Diff	Actual $	Total Expenditures FY 2018	% Goal	% Actual	Diff	Actual $	Total Expenditures FY 2019
			HUB Expenditures FY 2018					HUB Expenditures FY 2019			
21.1%	Building Construction	25.7 %	25.9%	0.2%	$1,533,745	$5,921,206	36.9 %	4.9%	-32.0%	$412,013	$8,352,028
32.9%	Special Trade	43.0 %	31.0%	-12.0%	$166,991	$538,329	37.2 %	2.1%	-35.1%	$13,225	$638,114
23.7%	Professional Services	5.5 %	57.7%	52.2%	$18,395	$31,883	20.5 %	13.2%	-7.3%	$1,864	$14,104
26.0%	Other Services	13.1 %	6.1%	-7.0%	$244,488	$4,002,628	9.6 %	13.0%	3.4%	$488,317	$3,761,550
21.1%	Commodities	17.3 %	16.6%	-0.7%	$1,711,743	$10,288,018	15.6 %	22.1%	6.5%	$2,612,321	$11,832,744
	Total Expenditures		**17.7%**		**$3,675,362**	**$20,782,064**		**14.3%**		**$3,527,740**	**$24,598,540**

B. Assessment of Fiscal Year - Efforts to Meet HUB Procurement Goals

Attainment:

The agency attained or exceeded two of five, or 40%, of the applicable statewide HUB procurement goals in both FY 2018 and FY 2019.

Applicability:

The "Heavy Construction" category was not applicable to agency operations in fiscal year 2018 and 2019

Factors Affecting Attainment:

TAMUS outsourced building construction and maintenance to a non-HUB vendor which makes it very difficult to set goals in the Building Construction, Special Trades and Professional Services. We have no control over the vendors selected to provide the services. The majority of the agency's purchases are scientific and technical equipment in support of ongoing research projects. Items of this nature (i.e. multi-power lasers, spectrophotometers and research microscopes) have not been identified as being readily available from HUB vendors, and in some cases, these purchases must be made outside the country to obtain the most advanced technology available. Our agency typically has limited or no expenditures in "Heavy Construction" or "Special Trade" categories.

"Good-Faith" Efforts:

TEES continues to assist HUB vendors in becoming certified, as well as assisting them in making direct contact with department personnel responsible for initiating purchases.
TEES has strongly encouraged the use of HUB vendors on DIR contracts for computers and related purchases.
TEES provides researchers and staff an updated HUB vendor list for commodities most often used by TEES divisions.
We remain committed to ensuring the utilization of HUB vendors through our outreach efforts by attending Economic Opportunity Forums and Purchasing Conferences, thus allowing constant contact with new HUB vendors as well as maintaining relationships with HUB vendors currently being utilized. TEES is also active in the HUB Discussion Workgroup and Texas Universities HUB Coordinator Alliance.

Agency Code: **712**   Agency: **Texas A&M Engineering Experiment Station**

TEES is monitoring all Amazon purchases in an effort to direct the expenditures to a HUB vendor.

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
10.025.000 Plant and Animal Disease					
1 - 1 - 1 RESEARCH PROGRAMS	223,116	181,774	181,774	204,145	204,145
TOTAL, ALL STRATEGIES	$223,116	$181,774	$181,774	$204,145	$204,145
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$223,116	$181,774	$181,774	$204,145	$204,145
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
10.310.000 Agriculture Food Research (AFRI)					
1 - 1 - 1 RESEARCH PROGRAMS	149,466	121,771	121,771	136,757	136,757
TOTAL, ALL STRATEGIES	$149,466	$121,771	$121,771	$136,757	$136,757
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$149,466	$121,771	$121,771	$136,757	$136,757
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
11.467.000 Hydrometeorological Development					
1 - 1 - 1 RESEARCH PROGRAMS	221,246	180,251	180,251	202,434	202,434
TOTAL, ALL STRATEGIES	$221,246	$180,251	$180,251	$202,434	$202,434
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$221,246	$180,251	$180,251	$202,434	$202,434
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
11.609.000 Measurement and Engineer					
1 - 1 - 1 RESEARCH PROGRAMS	957,602	780,166	780,166	876,178	876,178
TOTAL, ALL STRATEGIES	$957,602	$780,166	$780,166	$876,178	$876,178
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$957,602	$780,166	$780,166	$876,178	$876,178
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.000.000 DOD MAINTENANCE					
1 - 1 - 1 RESEARCH PROGRAMS	1,903,840	1,551,075	1,551,075	3,741,960	3,741,960

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$1,903,840	$1,551,075	$1,551,075	$3,741,960	$3,741,960
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,903,840	$1,551,075	$1,551,075	$3,741,960	$3,741,960
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.114.000 Collaborative Research a					
1 - 1 - 1 RESEARCH PROGRAMS	107,027	87,196	87,196	97,927	97,927
TOTAL, ALL STRATEGIES	$107,027	$87,196	$87,196	$97,927	$97,927
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$107,027	$87,196	$87,196	$97,927	$97,927
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.300.000 Basic and Applied Scient					
1 - 1 - 1 RESEARCH PROGRAMS	2,903,110	2,365,188	2,365,188	2,656,263	2,656,263
TOTAL, ALL STRATEGIES	$2,903,110	$2,365,188	$2,365,188	$2,656,263	$2,656,263
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$2,903,110	$2,365,188	$2,365,188	$2,656,263	$2,656,263
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.351.000 Combating Wpns of Mass Destruction					
1 - 1 - 1 RESEARCH PROGRAMS	242,356	197,450	197,450	221,749	221,749
TOTAL, ALL STRATEGIES	$242,356	$197,450	$197,450	$221,749	$221,749
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$242,356	$197,450	$197,450	$221,749	$221,749
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.420.000 Military Medical Researc					
1 - 1 - 1 RESEARCH PROGRAMS	307,939	250,880	250,880	281,755	281,755
1 - 3 - 1 WORKFORCE DEVELOPMENT	6,541	6,235	6,235	6,464	6,464

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$314,480	$257,115	$257,115	$288,219	$288,219
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$314,480	$257,115	$257,115	$288,219	$288,219
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.431.000 Basic Scientific Researc					
1 - 1 - 1 RESEARCH PROGRAMS	1,341,685	1,093,082	1,093,082	9,227,603	9,227,603
TOTAL, ALL STRATEGIES	$1,341,685	$1,093,082	$1,093,082	$9,227,603	$9,227,603
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,341,685	$1,093,082	$1,093,082	$9,227,603	$9,227,603
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.630.000 Basic, Applied, and Adva					
1 - 1 - 1 RESEARCH PROGRAMS	694,461	565,783	565,783	635,412	635,412
TOTAL, ALL STRATEGIES	$694,461	$565,783	$565,783	$635,412	$635,412
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$694,461	$565,783	$565,783	$635,412	$635,412
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.800.000 Air Force Defense Resear					
1 - 1 - 1 RESEARCH PROGRAMS	3,948,510	3,216,885	3,216,885	3,612,775	3,612,775
TOTAL, ALL STRATEGIES	$3,948,510	$3,216,885	$3,216,885	$3,612,775	$3,612,775
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$3,948,510	$3,216,885	$3,216,885	$3,612,775	$3,612,775
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.902.000 Information Security Gra					
1 - 1 - 1 RESEARCH PROGRAMS	97,872	79,737	79,737	89,550	89,550

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$97,872	$79,737	$79,737	$89,550	$89,550
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$97,872	$79,737	$79,737	$89,550	$89,550
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
12.910.000 Research and Technology					
1 - 1 - 1 RESEARCH PROGRAMS	2,437,177	1,985,588	1,985,588	2,229,947	2,229,947
TOTAL, ALL STRATEGIES	$2,437,177	$1,985,588	$1,985,588	$2,229,947	$2,229,947
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$2,437,177	$1,985,588	$1,985,588	$2,229,947	$2,229,947
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
15.441.000 Safety and Envir. Enforc Rsch&Data					
1 - 1 - 1 RESEARCH PROGRAMS	1,035,673	843,772	843,772	947,611	947,611
TOTAL, ALL STRATEGIES	$1,035,673	$843,772	$843,772	$947,611	$947,611
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,035,673	$843,772	$843,772	$947,611	$947,611
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
19.033.000 Global Threat Reduction					
1 - 1 - 1 RESEARCH PROGRAMS	316,579	257,920	257,920	289,661	289,661
TOTAL, ALL STRATEGIES	$316,579	$257,920	$257,920	$289,661	$289,661
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$316,579	$257,920	$257,920	$289,661	$289,661
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.108.000 Aviation Research Grants					
1 - 1 - 1 RESEARCH PROGRAMS	157,082	127,976	127,976	143,725	143,725

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$157,082	$127,976	$127,976	$143,725	$143,725
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$157,082	$127,976	$127,976	$143,725	$143,725
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.109.000 Air Transportation Cente					
1 - 1 - 1 RESEARCH PROGRAMS	26,764	21,805	21,805	24,488	24,488
TOTAL, ALL STRATEGIES	$26,764	$21,805	$21,805	$24,488	$24,488
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$26,764	$21,805	$21,805	$24,488	$24,488
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.614.000 NHTSA Discretionary Safety Grants					
1 - 1 - 1 RESEARCH PROGRAMS	111,358	90,724	90,724	101,890	101,890
TOTAL, ALL STRATEGIES	$111,358	$90,724	$90,724	$101,890	$101,890
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$111,358	$90,724	$90,724	$101,890	$101,890
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.701.000 University Transportation					
1 - 1 - 1 RESEARCH PROGRAMS	290,543	236,708	236,708	265,839	265,839
TOTAL, ALL STRATEGIES	$290,543	$236,708	$236,708	$265,839	$265,839
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$290,543	$236,708	$236,708	$265,839	$265,839
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.724.000 CAAP					
1 - 1 - 1 RESEARCH PROGRAMS	25,589	20,847	20,847	23,413	23,413

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$25,589	$20,847	$20,847	$23,413	$23,413
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$25,589	$20,847	$20,847	$23,413	$23,413
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
20.931.000 Trans. Planning Research & Ed					
1 - 1 - 1 RESEARCH PROGRAMS	36,692	29,893	29,893	33,572	33,572
TOTAL, ALL STRATEGIES	$36,692	$29,893	$29,893	$33,572	$33,572
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$36,692	$29,893	$29,893	$33,572	$33,572
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.000.012 NASA Contract					
1 - 1 - 1 RESEARCH PROGRAMS	16,611	13,533	13,533	15,199	15,199
TOTAL, ALL STRATEGIES	$16,611	$13,533	$13,533	$15,199	$15,199
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$16,611	$13,533	$13,533	$15,199	$15,199
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.001.000 Aerospace Education Servi					
1 - 1 - 1 RESEARCH PROGRAMS	445,482	362,938	362,938	407,603	407,603
TOTAL, ALL STRATEGIES	$445,482	$362,938	$362,938	$407,603	$407,603
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$445,482	$362,938	$362,938	$407,603	$407,603
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.002.000 Technology Transfer					
1 - 1 - 1 RESEARCH PROGRAMS	2,251,965	1,834,695	1,834,695	2,060,484	2,060,484

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$2,251,965	$1,834,695	$1,834,695	$2,060,484	$2,060,484
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$2,251,965	$1,834,695	$1,834,695	$2,060,484	$2,060,484
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.003.000 TEES Project B6830-Exploration					
1 - 1 - 1 RESEARCH PROGRAMS	91,854	74,834	74,834	84,044	84,044
TOTAL, ALL STRATEGIES	$91,854	$74,834	$74,834	$84,044	$84,044
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$91,854	$74,834	$74,834	$84,044	$84,044
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.007.000 Space Operations					
1 - 1 - 1 RESEARCH PROGRAMS	68,785	56,040	56,040	62,936	62,936
TOTAL, ALL STRATEGIES	$68,785	$56,040	$56,040	$62,936	$62,936
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$68,785	$56,040	$56,040	$62,936	$62,936
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.008.000 TEES Project B5310 - Education					
1 - 1 - 1 RESEARCH PROGRAMS	127,266	103,685	103,685	116,445	116,445
TOTAL, ALL STRATEGIES	$127,266	$103,685	$103,685	$116,445	$116,445
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$127,266	$103,685	$103,685	$116,445	$116,445
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
43.012.000 Space Technology					
1 - 1 - 1 RESEARCH PROGRAMS	126,386	102,968	102,968	115,640	115,640

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$126,386	$102,968	$102,968	$115,640	$115,640
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$126,386	$102,968	$102,968	$115,640	$115,640
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.000.000 NATIONAL SCIENCE FOUNDATI					
1 - 1 - 1 RESEARCH PROGRAMS	376,542	306,772	306,772	344,526	344,526
TOTAL, ALL STRATEGIES	$376,542	$306,772	$306,772	$344,526	$344,526
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$376,542	$306,772	$306,772	$344,526	$344,526
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.041.000 Engineering Grants					
1 - 1 - 1 RESEARCH PROGRAMS	13,675,415	11,186,199	11,186,199	12,562,845	12,562,845
1 - 3 - 1 WORKFORCE DEVELOPMENT	263,294	251,003	251,003	260,221	260,221
TOTAL, ALL STRATEGIES	$13,938,709	$11,437,202	$11,437,202	$12,823,066	$12,823,066
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$13,938,709	$11,437,202	$11,437,202	$12,823,066	$12,823,066
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.049.000 Mathematical and Physical					
1 - 1 - 1 RESEARCH PROGRAMS	1,422,793	1,159,161	1,159,161	1,301,815	1,301,815
TOTAL, ALL STRATEGIES	$1,422,793	$1,159,161	$1,159,161	$1,301,815	$1,301,815
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,422,793	$1,159,161	$1,159,161	$1,301,815	$1,301,815
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.050.000 Geosciences					
1 - 1 - 1 RESEARCH PROGRAMS	364,847	297,244	297,244	333,825	333,825

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$364,847	$297,244	$297,244	$333,825	$333,825
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$364,847	$297,244	$297,244	$333,825	$333,825
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.070.000 Computer and Information					
1 - 1 - 1 RESEARCH PROGRAMS	5,159,575	4,203,549	4,203,549	4,720,864	4,720,864
1 - 3 - 1 WORKFORCE DEVELOPMENT	98,632	94,028	94,028	97,481	97,481
TOTAL, ALL STRATEGIES	$5,258,207	$4,297,577	$4,297,577	$4,818,345	$4,818,345
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$5,258,207	$4,297,577	$4,297,577	$4,818,345	$4,818,345
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.074.000 Biological Sciences					
1 - 1 - 1 RESEARCH PROGRAMS	197,220	160,677	160,677	180,451	180,451
TOTAL, ALL STRATEGIES	$197,220	$160,677	$160,677	$180,451	$180,451
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$197,220	$160,677	$160,677	$180,451	$180,451
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.075.000 Social, Behavioral, and					
1 - 1 - 1 RESEARCH PROGRAMS	318,325	259,342	259,342	291,258	291,258
TOTAL, ALL STRATEGIES	$318,325	$259,342	$259,342	$291,258	$291,258
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$318,325	$259,342	$259,342	$291,258	$291,258
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.076.000 Education and Human Reso					
1 - 1 - 1 RESEARCH PROGRAMS	1,001,705	816,097	816,097	916,531	916,531

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
1 - 3 - 1 WORKFORCE DEVELOPMENT	1,632,230	1,556,034	1,556,034	1,613,177	1,613,177
TOTAL, ALL STRATEGIES	$2,633,935	$2,372,131	$2,372,131	$2,529,708	$2,529,708
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$2,633,935	$2,372,131	$2,372,131	$2,529,708	$2,529,708
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
47.079.000 International Science & Engineering					
1 - 1 - 1 RESEARCH PROGRAMS	71,957	58,624	58,624	65,839	65,839
TOTAL, ALL STRATEGIES	$71,957	$58,624	$58,624	$65,839	$65,839
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$71,957	$58,624	$58,624	$65,839	$65,839
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
77.000.000					
1 - 1 - 1 RESEARCH PROGRAMS	32,394	26,392	26,392	29,640	29,640
TOTAL, ALL STRATEGIES	$32,394	$26,392	$26,392	$29,640	$29,640
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$32,394	$26,392	$26,392	$29,640	$29,640
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
77.008.000 US Nuclear Scholarship & Fellowship					
1 - 1 - 1 RESEARCH PROGRAMS	385,512	314,080	314,080	352,732	352,732
TOTAL, ALL STRATEGIES	$385,512	$314,080	$314,080	$352,732	$352,732
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$385,512	$314,080	$314,080	$352,732	$352,732
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.041.000 State Energy Conservation					
1 - 1 - 1 RESEARCH PROGRAMS	272,363	221,897	221,897	249,205	249,205

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$272,363	$221,897	$221,897	$249,205	$249,205
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$272,363	$221,897	$221,897	$249,205	$249,205
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.049.000 OFFICE OF ENERGY RESEARCH					
1 - 1 - 1 RESEARCH PROGRAMS	1,597,931	1,301,848	1,301,848	1,462,061	1,462,061
TOTAL, ALL STRATEGIES	$1,597,931	$1,301,848	$1,301,848	$1,462,061	$1,462,061
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,597,931	$1,301,848	$1,301,848	$1,462,061	$1,462,061
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.086.000 Conservation Research and					
1 - 1 - 1 RESEARCH PROGRAMS	798,407	650,469	650,469	730,519	730,519
TOTAL, ALL STRATEGIES	$798,407	$650,469	$650,469	$730,519	$730,519
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$798,407	$650,469	$650,469	$730,519	$730,519
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.087.000 Renewable Energy Research					
1 - 1 - 1 RESEARCH PROGRAMS	1,447,991	1,179,691	1,179,691	1,324,871	1,324,871
TOTAL, ALL STRATEGIES	$1,447,991	$1,179,691	$1,179,691	$1,324,871	$1,324,871
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,447,991	$1,179,691	$1,179,691	$1,324,871	$1,324,871
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.089.000 Fossil Energy Research an					
1 - 1 - 1 RESEARCH PROGRAMS	1,127,121	918,275	918,275	1,031,283	1,031,283

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$1,127,121	$918,275	$918,275	$1,031,283	$1,031,283
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,127,121	$918,275	$918,275	$1,031,283	$1,031,283
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.104.000 Technology Development fo					
1 - 1 - 1 RESEARCH PROGRAMS	83,293	67,860	67,860	76,211	76,211
TOTAL, ALL STRATEGIES	$83,293	$67,860	$67,860	$76,211	$76,211
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$83,293	$67,860	$67,860	$76,211	$76,211
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.113.000 NONPROLIFERATION & SECURI					
1 - 1 - 1 RESEARCH PROGRAMS	120,134	97,874	97,874	109,919	109,919
TOTAL, ALL STRATEGIES	$120,134	$97,874	$97,874	$109,919	$109,919
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$120,134	$97,874	$97,874	$109,919	$109,919
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.117.000 Energy Efficiency					
1 - 1 - 1 RESEARCH PROGRAMS	343,331	279,715	279,715	314,138	314,138
TOTAL, ALL STRATEGIES	$343,331	$279,715	$279,715	$314,138	$314,138
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$343,331	$279,715	$279,715	$314,138	$314,138
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.121.000 Nuclear Energy Research, Dev & Demo					
1 - 1 - 1 RESEARCH PROGRAMS	5,864,295	4,777,691	4,777,691	5,365,663	5,365,663

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$5,864,295	$4,777,691	$4,777,691	$5,365,663	$5,365,663
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$5,864,295	$4,777,691	$4,777,691	$5,365,663	$5,365,663
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.122.000 Elctrcty Dlvry & Rliblty-Stimulus					
1 - 1 - 1 RESEARCH PROGRAMS	1,202,889	980,003	980,003	1,100,609	1,100,609
TOTAL, ALL STRATEGIES	$1,202,889	$980,003	$980,003	$1,100,609	$1,100,609
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,202,889	$980,003	$980,003	$1,100,609	$1,100,609
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
81.135.000 ARPA Enrgy Fin Asstnc Prog-Stimulus					
1 - 1 - 1 RESEARCH PROGRAMS	608,245	495,542	495,542	556,527	556,527
TOTAL, ALL STRATEGIES	$608,245	$495,542	$495,542	$556,527	$556,527
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$608,245	$495,542	$495,542	$556,527	$556,527
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
84.305.000 RAND- US Department of Ed					
1 - 1 - 1 RESEARCH PROGRAMS	57,000	46,439	46,439	52,154	52,154
TOTAL, ALL STRATEGIES	$57,000	$46,439	$46,439	$52,154	$52,154
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$57,000	$46,439	$46,439	$52,154	$52,154
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.084.000 Prevention/Infectious Diseases					
1 - 1 - 1 RESEARCH PROGRAMS	100,445	81,833	81,833	91,904	91,904

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$100,445	$81,833	$81,833	$91,904	$91,904
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$100,445	$81,833	$81,833	$91,904	$91,904
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.103.000 Food and Drug Administrat					
1 - 1 - 1 RESEARCH PROGRAMS	357,270	291,071	291,071	326,892	326,892
TOTAL, ALL STRATEGIES	$357,270	$291,071	$291,071	$326,892	$326,892
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$357,270	$291,071	$291,071	$326,892	$326,892
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.113.000 Biological Response to En					
1 - 1 - 1 RESEARCH PROGRAMS	104,462	85,106	85,106	95,579	95,579
TOTAL, ALL STRATEGIES	$104,462	$85,106	$85,106	$95,579	$95,579
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$104,462	$85,106	$85,106	$95,579	$95,579
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.121.000 Oral Diseases and Disorde					
1 - 1 - 1 RESEARCH PROGRAMS	365,492	297,769	297,769	334,414	334,414
TOTAL, ALL STRATEGIES	$365,492	$297,769	$297,769	$334,414	$334,414
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$365,492	$297,769	$297,769	$334,414	$334,414
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.173.000 Research Related to Deafn					
1 - 1 - 1 RESEARCH PROGRAMS	53,811	43,841	43,841	49,236	49,236

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$53,811	$43,841	$43,841	$49,236	$49,236
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$53,811	$43,841	$43,841	$49,236	$49,236
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.213.000 Research and Training in					
1 - 1 - 1 RESEARCH PROGRAMS	114,335	93,150	93,150	104,613	104,613
TOTAL, ALL STRATEGIES	$114,335	$93,150	$93,150	$104,613	$104,613
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$114,335	$93,150	$93,150	$104,613	$104,613
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.242.000 Mental Health Research Gr					
1 - 1 - 1 RESEARCH PROGRAMS	37,203	30,310	30,310	34,040	34,040
TOTAL, ALL STRATEGIES	$37,203	$30,310	$30,310	$34,040	$34,040
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$37,203	$30,310	$30,310	$34,040	$34,040
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.262.000 Occupational Safety and H					
1 - 1 - 1 RESEARCH PROGRAMS	393,599	320,669	320,669	360,132	360,132
TOTAL, ALL STRATEGIES	$393,599	$320,669	$320,669	$360,132	$360,132
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$393,599	$320,669	$320,669	$360,132	$360,132
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.286.000 Biomedical Imaging Research					
1 - 1 - 1 RESEARCH PROGRAMS	582,900	474,894	474,894	533,337	533,337

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$582,900	$474,894	$474,894	$533,337	$533,337
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$582,900	$474,894	$474,894	$533,337	$533,337
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.310.000 Trans-NIH Research Support					
1 - 1 - 1 RESEARCH PROGRAMS	749,310	610,469	610,469	685,597	685,597
TOTAL, ALL STRATEGIES	$749,310	$610,469	$610,469	$685,597	$685,597
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$749,310	$610,469	$610,469	$685,597	$685,597
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.360.000 Biomedical Adv Rsc & Dev. Authority					
1 - 1 - 1 RESEARCH PROGRAMS	418,263	340,762	340,762	382,698	382,698
TOTAL, ALL STRATEGIES	$418,263	$340,762	$340,762	$382,698	$382,698
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$418,263	$340,762	$340,762	$382,698	$382,698
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.393.000 Cancer Cause and Preventi					
1 - 1 - 1 RESEARCH PROGRAMS	116,606	95,000	95,000	106,691	106,691
TOTAL, ALL STRATEGIES	$116,606	$95,000	$95,000	$106,691	$106,691
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$116,606	$95,000	$95,000	$106,691	$106,691
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.394.000 Cancer Detection and Diag					
1 - 1 - 1 RESEARCH PROGRAMS	77,376	63,039	63,039	70,797	70,797

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CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$77,376	$63,039	$63,039	$70,797	$70,797
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$77,376	$63,039	$63,039	$70,797	$70,797
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.399.000 Cancer Control					
1 - 1 - 1 RESEARCH PROGRAMS	11,540	9,402	9,402	10,559	10,559
TOTAL, ALL STRATEGIES	$11,540	$9,402	$9,402	$10,559	$10,559
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$11,540	$9,402	$9,402	$10,559	$10,559
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.837.000 Cardiovascular Diseases Research					
1 - 1 - 1 RESEARCH PROGRAMS	26,357	21,473	21,473	24,116	24,116
TOTAL, ALL STRATEGIES	$26,357	$21,473	$21,473	$24,116	$24,116
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$26,357	$21,473	$21,473	$24,116	$24,116
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.846.000 Arthritis, Musculoskeleta					
1 - 1 - 1 RESEARCH PROGRAMS	114,167	93,012	93,012	104,459	104,459
TOTAL, ALL STRATEGIES	$114,167	$93,012	$93,012	$104,459	$104,459
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$114,167	$93,012	$93,012	$104,459	$104,459
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.853.000 Clinical Research Related					
1 - 1 - 1 RESEARCH PROGRAMS	556,174	453,120	453,120	508,883	508,883

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$556,174	$453,120	$453,120	$508,883	$508,883
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$556,174	$453,120	$453,120	$508,883	$508,883
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.855.000 Allergy, Immunology and T					
1 - 1 - 1 RESEARCH PROGRAMS	824,882	672,038	672,038	754,743	754,743
TOTAL, ALL STRATEGIES	$824,882	$672,038	$672,038	$754,743	$754,743
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$824,882	$672,038	$672,038	$754,743	$754,743
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.859.000 Biomedical Research and Research Tr					
1 - 1 - 1 RESEARCH PROGRAMS	660,702	538,280	538,280	604,524	604,524
TOTAL, ALL STRATEGIES	$660,702	$538,280	$538,280	$604,524	$604,524
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$660,702	$538,280	$538,280	$604,524	$604,524
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.865.000 Child Health & Human Dvlpmt					
1 - 1 - 1 RESEARCH PROGRAMS	1,110	904	904	1,016	1,016
TOTAL, ALL STRATEGIES	$1,110	$904	$904	$1,016	$1,016
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$1,110	$904	$904	$1,016	$1,016
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
93.866.000 Aging Research					
1 - 1 - 1 RESEARCH PROGRAMS	56,192	45,780	45,780	51,414	51,414

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$56,192	$45,780	$45,780	$51,414	$51,414
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$56,192	$45,780	$45,780	$51,414	$51,414
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
97.000.000 Misc Pymnts Dept Of Hmlnd Security					
1 - 1 - 1 RESEARCH PROGRAMS	504,439	378,471	378,471	425,048	425,048
TOTAL, ALL STRATEGIES	$504,439	$378,471	$378,471	$425,048	$425,048
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$504,439	$378,471	$378,471	$425,048	$425,048
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
97.061.000 Centers for Homeland Security					
1 - 1 - 1 RESEARCH PROGRAMS	110,350	77,678	77,678	87,238	87,238
TOTAL, ALL STRATEGIES	$110,350	$77,678	$77,678	$87,238	$87,238
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$110,350	$77,678	$77,678	$87,238	$87,238
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0
98.001.000 USAid Asst for Programs Overseas					
1 - 1 - 1 RESEARCH PROGRAMS	51,645	42,076	42,076	47,254	47,254
TOTAL, ALL STRATEGIES	$51,645	$42,076	$42,076	$47,254	$47,254
ADDL FED FNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$51,645	$42,076	$42,076	$47,254	$47,254
ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0

	712 Texas A&M Engineering Experiment Station				
CFDA NUMBER/ STRATEGY	**Exp 2019**	**Est 2020**	**Bud 2021**	**BL 2022**	**BL 2023**

SUMMARY LISTING OF FEDERAL PROGRAM AMOUNTS

CFDA NUMBER / STRATEGY		Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
10.025.000	Plant and Animal Disease	223,116	181,774	181,774	204,145	204,145
10.310.000	Agriculture Food Research (AFRI)	149,466	121,771	121,771	136,757	136,757
11.467.000	Hydrometeorological Development	221,246	180,251	180,251	202,434	202,434
11.609.000	Measurement and Engineer	957,602	780,166	780,166	876,178	876,178
12.000.000	DOD MAINTENANCE	1,903,840	1,551,075	1,551,075	3,741,960	3,741,960
12.114.000	Collaborative Research a	107,027	87,196	87,196	97,927	97,927
12.300.000	Basic and Applied Scient	2,903,110	2,365,188	2,365,188	2,656,263	2,656,263
12.351.000	Combating Wpns of Mass Destruction	242,356	197,450	197,450	221,749	221,749
12.420.000	Military Medical Researc	314,480	257,115	257,115	288,219	288,219
12.431.000	Basic Scientific Researc	1,341,685	1,093,082	1,093,082	9,227,603	9,227,603
12.630.000	Basic, Applied, and Adva	694,461	565,783	565,783	635,412	635,412
12.800.000	Air Force Defense Resear	3,948,510	3,216,885	3,216,885	3,612,775	3,612,775
12.902.000	Information Security Gra	97,872	79,737	79,737	89,550	89,550
12.910.000	Research and Technology	2,437,177	1,985,588	1,985,588	2,229,947	2,229,947
15.441.000	Safety and Envir. Enforc Rsch&Data	1,035,673	843,772	843,772	947,611	947,611
19.033.000	Global Threat Reduction	316,579	257,920	257,920	289,661	289,661
20.108.000	Aviation Research Grants	157,082	127,976	127,976	143,725	143,725

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY		Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
20.109.000	Air Transportation Cente	26,764	21,805	21,805	24,488	24,488
20.614.000	NHTSA Discretionary Safety Grants	111,358	90,724	90,724	101,890	101,890
20.701.000	University Transportation	290,543	236,708	236,708	265,839	265,839
20.724.000	CAAP	25,589	20,847	20,847	23,413	23,413
20.931.000	Trans. Planning Research & Ed	36,692	29,893	29,893	33,572	33,572
43.000.012	NASA Contract	16,611	13,533	13,533	15,199	15,199
43.001.000	Aerospace Education Servi	445,482	362,938	362,938	407,603	407,603
43.002.000	Technology Transfer	2,251,965	1,834,695	1,834,695	2,060,484	2,060,484
43.003.000	TEES Project B6830-Exploration	91,854	74,834	74,834	84,044	84,044
43.007.000	Space Operations	68,785	56,040	56,040	62,936	62,936
43.008.000	TEES Project B5310 - Education	127,266	103,685	103,685	116,445	116,445
43.012.000	Space Technology	126,386	102,968	102,968	115,640	115,640
47.000.000	NATIONAL SCIENCE FOUNDATI	376,542	306,772	306,772	344,526	344,526
47.041.000	Engineering Grants	13,938,709	11,437,202	11,437,202	12,823,066	12,823,066
47.049.000	Mathematical and Physical	1,422,793	1,159,161	1,159,161	1,301,815	1,301,815
47.050.000	Geosciences	364,847	297,244	297,244	333,825	333,825
47.070.000	Computer and Information	5,258,207	4,297,577	4,297,577	4,818,345	4,818,345
47.074.000	Biological Sciences	197,220	160,677	160,677	180,451	180,451
47.075.000	Social, Behavioral, and	318,325	259,342	259,342	291,258	291,258
47.076.000	Education and Human Reso	2,633,935	2,372,131	2,372,131	2,529,708	2,529,708

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY		Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
47.079.000	International Science & Engineering	71,957	58,624	58,624	65,839	65,839
77.000.000		32,394	26,392	26,392	29,640	29,640
77.008.000	US Nuclear Scholarship & Fellowship	385,512	314,080	314,080	352,732	352,732
81.041.000	State Energy Conservation	272,363	221,897	221,897	249,205	249,205
81.049.000	OFFICE OF ENERGY RESEARCH	1,597,931	1,301,848	1,301,848	1,462,061	1,462,061
81.086.000	Conservation Research and	798,407	650,469	650,469	730,519	730,519
81.087.000	Renewable Energy Research	1,447,991	1,179,691	1,179,691	1,324,871	1,324,871
81.089.000	Fossil Energy Research an	1,127,121	918,275	918,275	1,031,283	1,031,283
81.104.000	Technology Development fo	83,293	67,860	67,860	76,211	76,211
81.113.000	NONPROLIFERATION & SECURI	120,134	97,874	97,874	109,919	109,919
81.117.000	Energy Efficiency	343,331	279,715	279,715	314,138	314,138
81.121.000	Nuclear Energy Research, Dev & Demo	5,864,295	4,777,691	4,777,691	5,365,663	5,365,663
81.122.000	Elctrcty Dlvry & Rliblty-Stimulus	1,202,889	980,003	980,003	1,100,609	1,100,609
81.135.000	ARPA Enrgy Fin Asstnc Prog-Stimulus	608,245	495,542	495,542	556,527	556,527
84.305.000	RAND- US Department of Ed	57,000	46,439	46,439	52,154	52,154
93.084.000	Prevention/Infectious Diseases	100,445	81,833	81,833	91,904	91,904
93.103.000	Food and Drug Administrat	357,270	291,071	291,071	326,892	326,892
93.113.000	Biological Response to En	104,462	85,106	85,106	95,579	95,579
93.121.000	Oral Diseases and Disorde	365,492	297,769	297,769	334,414	334,414
93.173.000	Research Related to Deafn	53,811	43,841	43,841	49,236	49,236

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY		Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
93.213.000	Research and Training in	114,335	93,150	93,150	104,613	104,613
93.242.000	Mental Health Research Gr	37,203	30,310	30,310	34,040	34,040
93.262.000	Occupational Safety and H	393,599	320,669	320,669	360,132	360,132
93.286.000	Biomedical Imaging Research	582,900	474,894	474,894	533,337	533,337
93.310.000	Trans-NIH Research Support	749,310	610,469	610,469	685,597	685,597
93.360.000	Biomedical Adv Rsc & Dev. Authority	418,263	340,762	340,762	382,698	382,698
93.393.000	Cancer Cause and Preventi	116,606	95,000	95,000	106,691	106,691
93.394.000	Cancer Detection and Diag	77,376	63,039	63,039	70,797	70,797
93.399.000	Cancer Control	11,540	9,402	9,402	10,559	10,559
93.837.000	Cardiovascular Diseases Research	26,357	21,473	21,473	24,116	24,116
93.846.000	Arthritis, Musculoskeleta	114,167	93,012	93,012	104,459	104,459
93.853.000	Clinical Research Related	556,174	453,120	453,120	508,883	508,883
93.855.000	Allergy, Immunology and T	824,882	672,038	672,038	754,743	754,743
93.859.000	Biomedical Research and Research Tr	660,702	538,280	538,280	604,524	604,524
93.865.000	Child Health & Human Dvlpmt	1,110	904	904	1,016	1,016
93.866.000	Aging Research	56,192	45,780	45,780	51,414	51,414
97.000.000	Misc Pymnts Dept Of Hmlnd Security	504,439	378,471	378,471	425,048	425,048
97.061.000	Centers for Homeland Security	110,350	77,678	77,678	87,238	87,238
98.001.000	USAid Asst for Programs Overseas	51,645	42,076	42,076	47,254	47,254

712 Texas A&M Engineering Experiment Station

CFDA NUMBER/ STRATEGY	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
TOTAL, ALL STRATEGIES	$65,582,648	$53,708,052	$53,708,052	$70,153,018	$70,153,018
TOTAL , ADDL FED FUNDS FOR EMPL BENEFITS	0	0	0	0	0
TOTAL, FEDERAL FUNDS	$65,582,648	$53,708,052	$53,708,052	$70,153,018	$70,153,018
TOTAL, ADDL GR FOR EMPL BENEFITS	$0	$0	$0	$0	$0

SUMMARY OF SPECIAL CONCERNS/ISSUES

Assumptions and Methodology:

Potential Loss:

87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

Agency code: **712**   Agency name: **Texas A&M Eng Expr Station**

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
OBJECTS OF EXPENSE						
1001	SALARIES AND WAGES	$421,838	$312,987	$312,987	$351,506	$351,506
1002	OTHER PERSONNEL COSTS	$114,629	$85,050	$85,050	$95,517	$95,517
1010	PROFESSIONAL SALARIES	$49,979	$37,082	$37,082	$41,646	$41,646
2004	UTILITIES	$10,297	$7,640	$7,640	$8,580	$8,580
2005	TRAVEL	$5,644	$4,188	$4,188	$4,703	$4,703
2009	OTHER OPERATING EXPENSE	$12,402	$9,202	$9,202	$10,334	$10,334
	TOTAL, OBJECTS OF EXPENSE	**$614,789**	**$456,149**	**$456,149**	**$512,286**	**$512,286**
METHOD OF FINANCING						
555	Federal Funds					
	CFDA 97.000.000, Misc Pymnts Dept Of Hmlnd Security	$504,439	$378,471	$378,471	$425,048	$425,048
	CFDA 97.061.000, Centers for Homeland Security	$110,350	$77,678	$77,678	$87,238	$87,238
	Subtotal, MOF (Federal Funds)	$614,789	$456,149	$456,149	$512,286	$512,286
	TOTAL, METHOD OF FINANCE	**$614,789**	**$456,149**	**$456,149**	**$512,286**	**$512,286**
	FULL-TIME-EQUIVALENT POSITIONS	**3.9**	**3.9**	**3.9**	**3.9**	**3.9**

NO FUNDS WERE PASSED THROUGH TO LOCAL ENTITIES

NO FUNDS WERE PASSED THROUGH TO OTHER STATE AGENCIES OR INSTITUTIONS OF HIGHER EDUCATION

Agency code:	**712**	Agency name:	**Texas A&M Eng Expr Station**		

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

USE OF HOMELAND SECURITY FUNDS

All homeland security expenditures are contained within Strategy 01-01-01 and are competitively bid grants. The Multi-Laboratory International Collaborative Environment(MICE) program is a two-phased effort with the goal of investigating, implementing, piloting, and evaluating a virtual collaborative environment to improve communication, coordination, and collaboration between state/university and federal animal health diagnostic and research bio-containment laboratories. The Laboratory Animal Records Application (LARA) program is a two-phased effort with the goal of developing, delivering, and deploying an information technology solution that streamlines laboratory workflows (through the use of lightweight and mobile means of data collection), as well as enhances data storage, management, reporting, and analysis. The goal of the Enhanced Passive Surveillance (EPS) was to develop and evaluate a system for early detection and situational awareness of significant endemic and emerging diseases, and augment current foreign animal, emerging, and zoonotic disease surveillance. The goal of the Integration and Transition of AgConnect® effort was twofold. First, it was to assess data integration strategies with veterinary diagnostic laboratories, and expand and refine the existing capabilities of AgConnect® to better meet newly identified needs of potential future transition partners. Second, was the investigation of requirements and gaps for potential future expansion/integration with public health surveillance systems along with the continued development and delivery of a strategy and plan for transition and long-term sustainment of the technology.

87th Regular Session, Agency Submission, Version 1
Automated Budget and Evaluation System of Texas (ABEST)

Agency code: **712**   Agency name: **Texas A&M Eng Expr Station**

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023
OBJECTS OF EXPENSE						
1001	SALARIES AND WAGES	$0	$40,185	$44,660	$0	$0
1002	OTHER PERSONNEL COSTS	$0	$11,193	$12,440	$0	$0
2001	PROFESSIONAL FEES AND SERVICES	$0	$7,905	$8,785	$0	$0
2003	CONSUMABLE SUPPLIES	$0	$50,368	$55,977	$0	$0
2004	UTILITIES	$0	$21	$0	$0	$0
2005	TRAVEL	$0	$64,784	$71,998	$0	$0
2006	RENT - BUILDING	$0	$6,106	$6,786	$0	$0
2007	RENT - MACHINE AND OTHER	$0	$2,278	$2,532	$0	$0
2009	OTHER OPERATING EXPENSE	$0	$177,079	$196,822	$0	$0
TOTAL, OBJECTS OF EXPENSE		**$0**	**$359,919**	**$400,000**	**$0**	**$0**
METHOD OF FINANCING						
1	General Revenue Fund	$0	$33	$0	$0	$0
	Subtotal, MOF (General Revenue Funds)	$0	$33	$0	$0	$0
8089	Indirect Cost Recov, Loc Held, est	$0	$128,925	$140,000	$0	$0
8888	Local/Not Appropriated Funds	$0	$230,961	$260,000	$0	$0
	Subtotal, MOF (Other Funds)	$0	$359,886	$400,000	$0	$0
TOTAL, METHOD OF FINANCE		**$0**	**$359,919**	**$400,000**	**$0**	**$0**
FULL-TIME-EQUIVALENT POSITIONS		**0.0**	**1.0**	**1.0**	**0.0**	**0.0**

NO FUNDS WERE PASSED THROUGH TO LOCAL ENTITIES

NO FUNDS WERE PASSED THROUGH TO OTHER STATE AGENCIES OR INSTITUTIONS OF HIGHER EDUCATION

87th Regular Session, Agency Submission, Version 1

Automated Budget and Evaluation System of Texas (ABEST)

Agency code:	**712**	Agency name:	**Texas A&M Eng Expr Station**

CODE	DESCRIPTION	Exp 2019	Est 2020	Bud 2021	BL 2022	BL 2023

USE OF HOMELAND SECURITY FUNDS

TEES remains actively engaged with COVID-19 response efforts within the state. Virtually all TEES research labs are operating under state and national guidance concerning social distancing and other CDC recommended protocols. A few examples of research and activities that TEES has been directly involved in related to COVID-19 are: (i) As part of the Governor's Texas Supply Chain Strikeforce, TEES provides several support services for the Texas Division of Emergency Management (TDEM). Specifically, TEES provided research engineers to inspect various Personal Protective Equipment (PPE) in the state's stockpile prior to those items being deployed to hospitals and nursing facilities around Texas. Additionally, TEES engineers trained Texas National Guardsmen to perform inspections of the stockpile. Finally, when the Governor commissioned Prestige Ameritech Ltd. to help increase the state's PPE stockpile by manufacturing N-95 masks, TEES entered into a service contract to perform engineering consulting services, which expand the company's capacity for producing the masks. (ii) A TEES Procurement Officer has been assigned for processing all procurement tasks approved by TDEM. This support service to TDEM includes securing all bids and submitting every order for the state's PPE stockpile. Ultimately, a large majority of all PPE that is coming through the state's warehouses will be procured by TEES Procurement Office on behalf of TDEM. (iii) TEES, along with Texas A&M University, has partnered with Houston Methodist Hospital through a formally executed Agreement to deliver 200 3D-printed diffusers for metered dose inhalers (MDI) and is capable of producing more. (iv) TEES has contracted with 8 different Texas hospitals and developed a process for making PPE from readily available materials to construct desperately needed medical personnel masks during a drastic depletion in resources as the number of COVID-19 cases continuously increase.

Texas A&M Engineering Experiment Station
Estimated Funds Outside the Institution's Bill Pattern
2020-21 and 2022-23 Biennia

	2020-21 Biennium				2022-23 Biennium			
	FY 2020 **Revenue**	**FY 2021** **Revenue**	**Biennium** **Total**	**Percent** **of Total**	**FY 2022** **Revenue**	**FY 2023** **Revenue**	**Biennium** **Total**	**Percent** **of Total**
APPROPRIATED SOURCES INSIDE THE BILL PATTERN								
State Appropriations (excluding HEGI & State Paid Fringes)	$ 70,131,416	$ 22,632,413	$ 92,763,829		$ 22,628,492	$ 22,632,177	$ 45,260,669	
Tuition and Fees (net of Discounts and Allowances)	-	-	-		-	-	-	
Endowment and Interest Income	-	-	-		-	-	-	
Sales and Services of Educational Activities (net)	-	-	-		-	-	-	
Sales and Services of Hospitals (net)	-	-	-		-	-	-	
Other Income	-	-	-		-	-	-	
Federal Grants and Contracts	55,344,593	55,344,593	110,689,186		72,059,953	72,059,953	144,119,905	
State Grants and Contracts	2,569,136	2,569,137	5,138,273		2,304,843	2,304,843	4,609,687	
Local Government Grants and Contracts	14,829,232	14,829,232	29,658,464		4,622,321	4,622,321	9,244,643	
Private Gifts and Grants	28,987,822	28,987,822	57,975,644		34,687,178	34,687,178	69,374,355	
Total	171,862,199	124,363,197	296,225,396	88.2%	136,302,787	136,306,472	272,609,259	85.9%
APPROPRIATED SOURCES OUTSIDE THE BILL PATTERN								
State Appropriations (HEGI & State Paid Fringes)	$ 4,832,672	$ 4,832,672	$ 9,665,344		$ 4,832,672	$ 4,832,672	$ 9,665,344	
Higher Education Assistance Funds	-	-	-		-	-	-	
Available University Fund	-	-	-		-	-	-	
State Grants and Contracts	-	-	-		-	-	-	
Total	4,832,672	4,832,672	9,665,344	2.9%	4,832,672	4,832,672	9,665,344	3.0%
NON-APPROPRIATED SOURCES								
Tuition and Fees (net of Discounts and Allowances)	-	-	-		-	-	-	
Federal Grants and Contracts	-	-	-		-	-	-	
State Grants and Contracts	-	-	-		-	-	-	
Local Government Grants and Contracts	-	-	-		-	-	-	
Private Gifts and Grants	1,240,000	1,400,000	2,640,000		1,400,000	1,400,000	2,800,000	
Endowment and Interest Income	4,000,000	3,537,000	7,537,000		3,750,000	3,750,000	7,500,000	
Sales and Services of Educational Activities (net)	9,649,254	9,426,000	19,075,254		12,000,000	12,240,000	24,240,000	
Sales and Services of Hospitals (net)	-	-	-		-	-	-	
Professional Fees (net)	-	-	-		-	-	-	
Auxiliary Enterprises (net)	-	-	-		-	-	-	
Other Income	300,000	300,000	600,000		300,000	300,000	600,000	
Total	15,189,254	14,663,000	29,852,254	8.9%	17,450,000	17,690,000	35,140,000	11.1%
TOTAL SOURCES	$ 191,884,125	$ 143,858,869	$ 335,742,994	100.0%	$ 158,585,459	$ 158,829,144	$ 317,414,603	100.0%

6.L. Document Production Standards
Summary of Savings Due to Improved Document Production Standards

Agency Code:	Agency Name:		Prepared By:
712	Texas A&M Engineering Experiment Station		John Crawford

Documented Production Standards Strategies	Estimated 2020	Budgeted 2021
1.	$0	$0
2.	$0	$0
3.	$0	$0
4.	$0	$0
Total, All Strategies	$0	$0
Total Estimated Paper Volume Reduced	-	-

Description:
Chapter 2052 of the Government Code (State Agency Reports and Publications) addresses similar issues as the rider provision. Texas A&M Transportation Institute has been following the statutory requirements in this chapter since they were enacted; there are no cost savings for this biennium.

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	E&G Enrollment	GR Enrollment	GR-D/OEGI Enrollment	Total E&G (Check)	Local Non-E&G
GR & GR-D Percentages					
GR %	100.00%				
GR-D/Other %	0.00%				
Total Percentage	100.00%				
FULL TIME ACTIVES					
1a Employee Only	77	77	0	77	145
2a Employee and Children	30	30	0	30	33
3a Employee and Spouse	23	23	0	23	34
4a Employee and Family	30	30	0	30	62
5a Eligible, Opt Out	5	5	0	5	18
6a Eligible, Not Enrolled	5	5	0	5	16
Total for This Section	**170**	**170**	**0**	**170**	**308**
PART TIME ACTIVES					
1b Employee Only	7	7	0	7	754
2b Employee and Children	1	1	0	1	5
3b Employee and Spouse	3	3	0	3	56
4b Employee and Family	1	1	0	1	22
5b Eligble, Opt Out	1	1	0	1	13
6b Eligible, Not Enrolled	1	1	0	1	101
Total for This Section	**14**	**14**	**0**	**14**	**951**
Total Active Enrollment	**184**	**184**	**0**	**184**	**1,259**

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	E&G Enrollment	GR Enrollment	GR-D/OEGI Enrollment	Total E&G (Check)	Local Non-E&G
FULL TIME RETIREES by ERS					
1c Employee Only	233	233	0	233	0
2c Employee and Children	9	9	0	9	0
3c Employee and Spouse	154	154	0	154	0
4c Employee and Family	12	12	0	12	0
5c Eligble, Opt Out	0	0	0	0	0
6c Eligible, Not Enrolled	0	0	0	0	0
Total for This Section	**408**	**408**	**0**	**408**	**0**
PART TIME RETIREES by ERS					
1d Employee Only	0	0	0	0	0
2d Employee and Children	0	0	0	0	0
3d Employee and Spouse	0	0	0	0	0
4d Employee and Family	0	0	0	0	0
5d Eligble, Opt Out	0	0	0	0	0
6d Eligible, Not Enrolled	0	0	0	0	0
Total for This Section	**0**	**0**	**0**	**0**	**0**
Total Retirees Enrollment	**408**	**408**	**0**	**408**	**0**
TOTAL FULL TIME ENROLLMENT					
1e Employee Only	310	310	0	310	145
2e Employee and Children	39	39	0	39	33
3e Employee and Spouse	177	177	0	177	34
4e Employee and Family	42	42	0	42	62
5e Eligble, Opt Out	5	5	0	5	18
6e Eligible, Not Enrolled	5	5	0	5	16
Total for This Section	**578**	**578**	**0**	**578**	**308**

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	E&G Enrollment	GR Enrollment	GR-D/OEGI Enrollment	Total E&G (Check)	Local Non-E&G
TOTAL ENROLLMENT					
1f Employee Only	317	317	0	317	899
2f Employee and Children	40	40	0	40	38
3f Employee and Spouse	180	180	0	180	90
4f Employee and Family	43	43	0	43	84
5f Eligble, Opt Out	6	6	0	6	31
6f Eligible, Not Enrolled	6	6	0	6	117
Total for This Section	**592**	**592**	**0**	**592**	**1,259**

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Agency 712 Texas A&M Engineering Experiment Station

Proportionality Percentage Based on Comptroller Accounting Policy Statement #011, Exhibit 2	2019		2020		2021		2022		2023	
	% to Total	Allocation of OASI	% to Total	Allocation of OASI	% to Total	Allocation of OASI	% to Total	Allocation of OASI	% to Total	Allocation of OASI
General Revenue (% to Total)	100.0000	$925,055	100.0000	$1,098,011	100.0000	$1,119,971	100.0000	$1,119,971	100.0000	$1,119,971
Other Educational and General Funds (% to Total)	0.0000	$0	0.0000	$0	0.0000	$0	0.0000	$0	0.0000	$0
Health-Related Institutions Patient Income (% to Total)	0.0000	$0	0.0000	$0	0.0000	$0	0.0000	$0	0.0000	$0
Grand Total, OASI (100%)	100.0000	**$925,055**	100.0000	**$1,098,011**	100.0000	**$1,119,971**	100.0000	**$1,119,971**	100.0000	**$1,119,971**

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Description	Act 2019	Act 2020	Bud 2021	Est 2022	Est 2023
Proportionality Amounts					
Gross Educational and General Payroll - Subject To TRS Retirement	11,216,441	11,000,000	11,000,000	11,000,000	11,000,000
Employer Contribution to TRS Retirement Programs	762,718	825,000	825,000	852,500	880,000
Gross Educational and General Payroll - Subject To ORP Retirement	4,541,864	3,775,533	3,775,533	3,775,533	3,775,533
Employer Contribution to ORP Retirement Programs	299,763	249,185	249,185	249,185	249,185
Proportionality Percentage					
General Revenue	100.0000 %	100.0000 %	100.0000 %	100.0000 %	100.0000 %
Other Educational and General Income	0.0000 %	0.0000 %	0.0000 %	0.0000 %	0.0000 %
Health-related Institutions Patient Income	0.0000 %	0.0000 %	0.0000 %	0.0000 %	0.0000 %
Proportional Contribution					
Other Educational and General Proportional Contribution	0	0	0	0	0
(Other E&G percentage x Total Employer Contribution to Retirement Programs)					
HRI Patient Income Proportional Contribution	0	0	0	0	0
(HRI Patient Income percentage x Total Employer Contribution To Retirement Programs)					
Differential					
Differential Percentage	1.9000 %	1.9000 %	1.9000 %	1.9000 %	1.9000 %
Gross Payroll Subject to Differential - Optional Retirement Program	1,668,359	1,051,666	1,051,666	1,051,666	1,051,666
Total Differential	31,699	19,982	19,982	19,982	19,982

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Activity	Act 2019	Act 2020	Bud 2021	Est 2022	Est 2023
A. PUF Bond Proceeds Allocation	85,050,000	3,640,000	3,000,000	3,000,000	0
Project Allocation					
Library Acquisitions	0	0	0	0	0
Construction, Repairs and Renovations	80,000,000	0	500,000	3,000,000	0
Furnishings & Equipment	0	0	0	0	0
Computer Equipment & Infrastructure	0	0	0	0	0
Reserve for Future Consideration	0	0	0	0	0
Other (Itemize)					
PUF Bond Proceeds					
Equipment/Minor Renovation Projects	5,050,000	2,640,000	2,500,000	0	0
Chancellor's Research Initiative Projects	0	1,000,000	0	0	0
B. HEF General Revenue Allocation	0	0	0	0	0
Project Allocation					
Library Acquisitions	0	0	0	0	0
Construction, Repairs and Renovations	0	0	0	0	0
Furnishings & Equipment	0	0	0	0	0
Computer Equipment & Infrastructure	0	0	0	0	0
Reserve for Future Consideration	0	0	0	0	0
HEF for Debt Service	0	0	0	0	0
Other (Itemize)					

Agency code: **712**   Agency name: **Texas A&M Eng Expr Station**

	Actual	Actual	Budgeted	Estimated	Estimated
Part A.					
FTE Postions					
Directly Appropriated Funds (Bill Pattern)					
Educational and General Funds Non-Faculty Employees	338.7	335.9	335.9	335.9	335.9
Subtotal, Directly Appropriated Funds	**338.7**	**335.9**	**335.9**	**335.9**	**335.9**
Other Appropriated Funds					
AUF	510.9	506.5	506.5	506.5	506.5
Subtotal, Other Appropriated Funds	**510.9**	**506.5**	**506.5**	**506.5**	**506.5**
Subtotal, All Appropriated	**849.6**	**842.4**	**842.4**	**842.4**	**842.4**
Non Appropriated Funds Employees	192.1	197.9	197.9	197.9	197.9
Subtotal, Other Funds & Non-Appropriated	**192.1**	**197.9**	**197.9**	**197.9**	**197.9**
GRAND TOTAL	**1,041.7**	**1,040.3**	**1,040.3**	**1,040.3**	**1,040.3**