



Business Case

for Facilities Management Services

The University of Tennessee at Martin

September 2017






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Shared vision, shared success

In 2016-17, the State of Tennessee issued a Request for Proposal (RFP) to facilities management outsourcing companies to identify the most qualified firm prepared to assist State of Tennessee and its higher education institutions in improving the quality of their campuses. After a competitive bidding process that involved three multinational firms, Jones Lang LaSalle Americas, Inc. (JLL) won the contract, based on our proposal and supported by our proven success with the State since 2013. Results of the initial program, which has included 10% of State properties, yielded improved service levels, higher occupant satisfaction, and more than \$40 million in cumulative savings between FY2013 – 2017. The program is on track to achieve more than \$50 million in savings over five years.

Moving forward to expand the outsourcing effort, JLL and the State of Tennessee have developed a shared vision statement built around the three pillars of teamwork, ethics, and excellence. This shared vision is the cornerstone of our partnership with the State and the Authorized Entities (AE) that utilize the master contract. This shared vision assures the University of Tennessee Martin (UTM) full transparency in costs, the highest commitment from both organizations to support UTM's needs, and complete access to investments into a world-leading facilities platform, which UTM cannot by itself achieve.

 <i>Teamwork</i> We empower each other	 <i>Ethics</i> We always act honestly and responsibly	 <i>Excellence</i> We always strive to be the best we can be
Tennessee's Shared Vision Statement		
We collaborate as good stewards for the citizens of Tennessee to provide customer centric services that drive excellence in facilities and grounds management, accomplished through empowered and engaged employees who innovate and optimize both processes and technology resulting in better service at lower cost.		

Based on this shared vision, JLL presents our Business Case to UTM on the following pages.

An opportunity for continued success at UT Martin

An opportunity has been identified for UTM to support its objective to “Ensure Effectiveness and Efficiency”, and the supporting goal to “maintain the campus facilities and grounds that invite people to engage with each other and the natural learning environment of the campus”. This support can come from efforts to build upon already successful facilities operations, providing a productive, safe, sustainable and aesthetically-pleasing environment. While enhancing existing programs, operating costs can be reduced modestly in initial years and more significantly into the future, while expertly stretching capital investments. In doing so, the University of Tennessee-Martin (UTM) can further its’ position to attract and retain leading student and faculty candidates, and to engage alumni.

UTM is fortunate to have a skilled and cohesive facilities team with seasoned leadership. Yet, there are opportunities to improve the aesthetics, safety and operational soundness of the campus to support its’ students, faculty and other occupants, as well as to create savings to fund these improvement opportunities. During our tour, we observed a well-managed campus, yet with certain opportunities for continued improvement, which JLL’s facility management platform can help address, while reducing the costs modestly upfront and more over time. (See specific insights below.)

Opportunities for UTM

While the State of Tennessee is particularly innovative regarding public-private partnerships, higher education institutions across the country have relied on private companies to manage and operate services for decades. Services outsourced at higher education institutions across Tennessee and the country include food and beverage, bookstore management, landscaping, janitorial, maintenance, security, parking and event ticketing.

JLL’s new contract with the State enables State agencies and public higher education institutions such as UTM to use JLL’s facilities management services at advantageous terms and conditions. UTM will gain the following benefits:

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- **Enhanced service quality for occupants and users of managed buildings.** JLL has observed the strength of the in-place team and facilities program at UTM, and seeks to combine those strengths with strengths of its own. Higher education institutions that choose to partner with JLL understand the company's proven track record of excellent services. As a demonstration of our commitment to high-quality service, JLL requests occupant feedback after each property maintenance service. In JLL-managed State of Tennessee-owned facilities, occupants reported a 97% satisfaction rating over the past four years, an occupant feedback process JLL would institute for UTM.
 - **Cost savings without sacrificing quality or service levels.** Based on our site tours of the UTM campus and data provided to JLL, we have identified cost reduction opportunities exceeding **\$93,000 annually, with most savings within the student housing auxiliary.** (see Appendix A for further detail).

JLL has entered facilities management relationships with clients in the past where modest savings opportunities are seen initially, only to always increase the amount of savings over time as familiarity with the client portfolio and active collaboration with the client progresses. We believe this can occur with UTM through normal facilities operations as well, plus through the scaled pricing elements as additional universities and state agencies are added into the program (see pages 19-20 below).

JLL's performance will be measured against these savings targets, as well as other agreed upon service levels and Key Performance Indicators (KPIs).

Identification of opportunities for improvements. JLL brings a fresh perspective to managed buildings, leveraging its scale and expertise to implement creative environmental initiatives and best practices. In Tennessee, JLL's integrated facilities management work since 2013 has saved more than 2,400 trees, a million gallons of water, and nearly 300 barrels of oil. JLL has streamlined utilities expenses, reducing electricity use at managed facilities by 600,000 kilowatt-hours. Its waste reduction program has kept 430 cubic yards of waste – enough to fill 43 cement mixer trucks – out of Tennessee landfills.

- **An environment where all employees are treated with respect—a priority for JLL and for UTM.** JLL has received numerous accolades for creating positive, productive workplaces at its managed buildings. *Fortune Magazine* has recognized JLL as one of the World's Most Ethical Companies for a decade and included the company on its 2017 World's Most Admired List. JLL regularly reviews compensation and benefits packages to ensure they are industry-leading, enabling the company to attract driven and engaged employees. Respect for and the relationship with all of its' employees is a fundamental element of JLL's success. (note further our "people care" program on pages 13-15 within this document).

Site tour observations and insights – opportunities to benefit UTM

JLL had the opportunity to tour UTM's campus in August 2017. This provided us with valuable insights into your facilities operations and opportunities for improvement. Below are some of our key observations and recommendations.

Custodial

- Develop more efficient work schedules to significantly increase productivity and saving in conjunction with JLL's Alliance Partner, **Diversified Maintenance** for custodial services
- Develop KPIs and quality assurance tracking programs
- Determine special rules and "hot spots"
- Conduct room, corridor inventory/unitize for custodial examine procedures, and service details for process improvement opportunities
- Consolidate purchase of safer and less expensive cleaning products and materials.
- We observed that the campus generally was in good custodial condition. It was noted, however, that increased staff training for healthier and more productive cleaning activities could alleviate elements like the following:
 - Safety and training concerns:

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- Water with sour mops in closets
 - Dirty mops thrown in corners
 - Numerous unlabeled bottles
 - Partially full containers without proper lids
 - Chemical stored above eye level
 - No goggles at mixing stations
 - Food and drinks on cleaning carts
 - Some cords with missing ground plugs
 - Equipment stored improperly
 - Scrubbers and wet vacuums not ventilated when not in use

Diversified Maintenance would introduce to the UTM team staff training including the following components:

- Orientation training
- On-the-job training/apprenticeships
- Classroom training

Grounds

- Consolidate third-party subcontractors into one (JLL's Alliance Partner for grounds and landscaping, **BrightView Landscapes**) for staffing, equipment, in-house design and irrigation repair, to deliver savings and increased expertise:
 - Mapping study for mowing and snow zones
 - Turf management program and treatment plan
 - Seasonal color installation plans
 - Grounds quality standards training
- Redesign flower beds to maintain high floral impact, while achieving savings

R&M

- Implement best practices for increased training to drive self-performance, safety, and better utilization of the in-house staff:
 - Workplace hazard assessment and identification of code violations
 - Conduct safety and skills training for all staff (36 online engineering training courses are available)
 - Undertake Skills/Needs Assessment for each employee
- Improve the preventive maintenance program to eliminate reactive and repetitive corrective work orders and improve safety:
 - Implement Predictive and Next Generation Maintenance programs to improve unplanned downtime, extend equipment life, and increase client satisfaction
 - Inventory all assets and determine asset conditions and age
- Leverage the JLL sourcing platform for reduced costs of third-party specialty R&M services and materials:

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- Implement JLL Marketplace – a one stop shop, client-facing e-commerce solution for the ordering and invoicing of products, granting quick and easy access to JLL leveraged pricing from national manufacturers and suppliers for a variety of categories: MRO (tools, parts and materials), standard consumables, construction supplies and industry leading partner and premium products
 - Implement purchasing relationships with pre-established preferred partners
 - Implement the numerous energy improvements identified, supported by the JLL staff for reduced utility costs
 - Undertake evaluation and management of all central plant and infrastructure elements, typically areas of significant sources of savings (see Appendix B – Central Plant Management Case Studies)

Proposed site leader

As part of our solution and staffing model, JLL will appoint a Site Leader for UTM, who will serve as your single-point-of-contact for all services delivered by JLL and our Alliance Partners. JLL has identified several confidential candidates for this position and we will work with UTM on the selection of the appropriate candidate.

JLL's Alliance Partners – custodial and grounds

Building a team of experts is critically important to achieving our shared goals and to delivering maximum value for UTM. We have selected two Alliance partners for this initiative: **BrightView Landscapes** for grounds maintenance and **Diversified Maintenance** for custodial services. However, our Alliance is not exclusive, and we have the ability to utilize incumbent suppliers where it is in the best interests of UTM.

Both Diversified and BrightView have a long partnership history with JLL and our firms are aligned with the State's vision. Together we will form 'One Team,' operating as a unified facilities maintenance organization focused on quality, consistency, and operational excellence across your portfolio.

An overview of BrightView and Diversified is provided below.

BrightView – Grounds / Landscaping Services

BrightView is the nation's leading landscape services company. More than 20,000 team members design, build, maintain, and enhance thousands of clients' properties including housing communities, corporate campuses, healthcare facilities, universities, retail establishments, and more. BrightView is passionate about creating exceptional landscapes and opportunities that advance our people, communities, and clients. In

each case the unique needs of our clients are considered and services are tailored accordingly (e.g., landscaping in the University's colors of orange and white).

Tennessee Presence

BrightView's network provides coverage throughout the State of Tennessee, with over:

- 200 full time employees and 59 trucks
- More than **250 locations served in Tennessee**
- Key Tennessee customers:
 - Tennessee State University
 - Williamson County Schools
 - Tennessee Smokies
 - Duke Realty
 - Stonemor Partners
 - FedEx
 - Google
 - Tennessee Smokies—AAA Baseball team in eastern TN

Commitment to the State

BrightView is committed to helping the State meet its goals. Our experienced experts will go beyond what's expected with recommendations and guidance you can trust. We combine a meticulous eye for detail with big picture focus to provide solutions that help reduce liability and contract management risk, improve employee well-being, and improve your operating budget. What's more, our LEED®-accredited professionals can help increase the sustainability of your properties with environmentally friendly practices that reduce water and chemical use and minimize debris to landfills.

Diversified Maintenance – Custodial Services

Diversified Maintenance, is a nationally-recognized cleaning service dedicated to providing its clients with high quality facility solutions. Establishment in 1997, Diversified Maintenance has grown to employ more than 7,500 associates, covering a national footprint. Key asset types include: office buildings, major industrial, manufacturing plants, and educational institutions.

Diversified Maintenance is active in:

- **Building Service Contractors Association International (BSCAI)** standards and has adopted the BSCAI Code of Ethics.

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- Attained the **ISSA Cleaning Industry Management Standard – Green Building criteria (CIMS-GB) with Honors**. CIMS-certified organizations must demonstrate compliance with the following Core Principles of the Standards and undergo a comprehensive management and operational assessment.

Tennessee Presence

Diversified Maintenance serves more than **380 client locations in Tennessee**. Their multi-industry offerings are customized solutions based on our long tenure in the janitorial service industry. The unique and complex challenges we have met in a variety of settings has granted us the technical knowledge required to provide top-quality service. Current clients in Tennessee include:

- ADM
- BB&T Bank
- BCBS of Tennessee
- Cadence Bank
- Colgate-Palmolive
- Commercial Vehicle Group
- Emerson
- First Tennessee (First Horizon)
- General Mills
- Honeywell
- Langley Companies
- Meritor
- Nissan
- Regions Bank
- Sonoco
- State of Tennessee
- University of Tennessee School of Veterinary Medicine

Commitment to the State

Diversified Maintenance will deliver a customized service plan based on the State's Desired Outcomes. While other facility maintenance companies use a standard service model to meet specific requirements, Diversified Maintenance has found that facilitating a service plan tailored to meet a specific client's cleaning needs will ultimately result in quality performance standards, a clean and safe environment, and measurable client satisfaction.

APPA compliance

JLL provides facilities management services to a number of educational institutions across the United States. As such, we have a deep understanding of APPA standards and codes. Ensuring compliance and best-in-class operating standards will be of paramount importance for the services we provide to UTM.

During transition, we will finalize scope and service-level standards, aligned with either APPA targets or targets determined by UTM for each site, zone, and area as required. We will also integrate these targets into technology tools and systems that will operate, manage and measure actual service results.



Additional APPA-related activities include:

- Create tasks and frequencies for each area and adjust as required
- Develop JLL and Alliance Partner playbooks for each service area and customize to UTM
- Flow-down all service / APPA level targets to each landscaper / custodian / engineer and manager
- Perform team safety training with ALL service and team members
- Customize safety plans to JLL and UTM requirements and standards
- Align work plans to UTM's Campus Master Plan and adjust to an agreed-upon frequency
- Review performance against key metrics daily, at the site-level monthly, and quarterly at governance levels, or as otherwise required by UTM
- Clearly establish ownership / accountability for quality, safety, and desired outcomes for all employees
- Perform QC inspections, tours, and walkabouts in collaboration with UTM contacts for alignment on improvement ideas and overall quality
- Conduct daily, weekly, monthly, and annual inspections by on-site supervisors
- Conduct unannounced senior management inspections
- Implement Brightview's 7 Standards of Excellence in Grounds operations

Work order management – powered by Corrigo

We propose to implement our Corrigo technology tools for enhanced workflow management at UTM. In late 2015, JLL acquired Corrigo Incorporated, a pioneer in cloud-based facility management solutions that improves productivity, increases

transparency, and provides advanced business analytics. This acquisition creates a transformational shift for JLL’s clients in using automation to streamline everything from initiating and tracking work orders, managing vendor bids and monitoring completed work to paying invoices.

Corrigo streamlines all service requests, so they are scheduled, tracked, and managed at a single location and into a single system. By bringing visibility, accountability, and automation to facilities management business processes, Corrigo’s powerful platform and mobile apps will provide UTM with the superior data, analytics, and business intelligence you need to help meet your performance goals, while reducing costs and improving service delivery.

Proposed transition plan

We anticipate a transition period of 90 days and a go-live date to be determined in collaboration with UTM. The critical first step to a successful transition is working with the State’s representatives on the announcement to the effected employees and ensuring we have an introductory meeting within 24-72 hours with this team.

A key element of the meeting is to share the process and overall timeline for the transition and allowing the employees to ask important questions that will affect them. The following table describes the key Human Resources (HR) events involved in the physical transfer employees, included recommended timing:

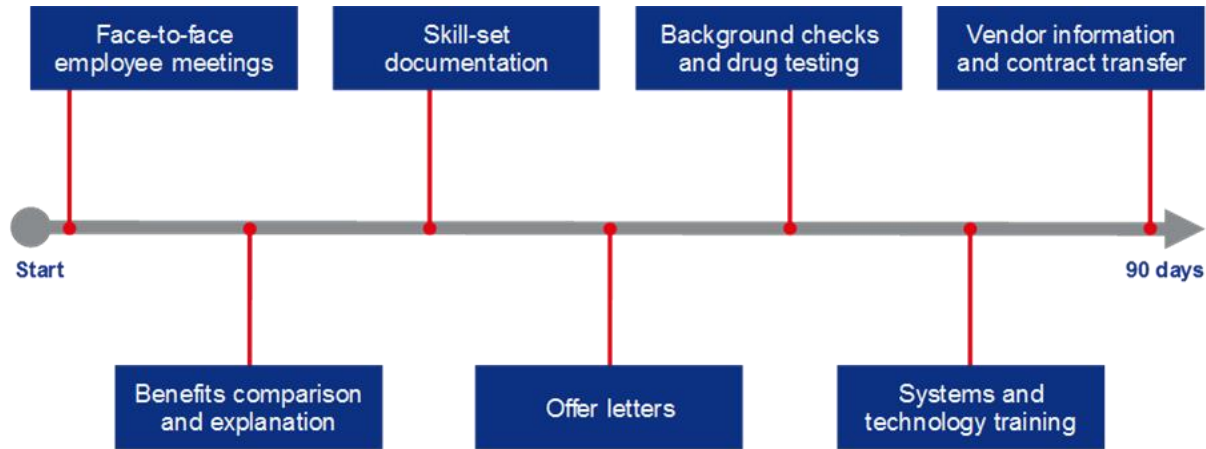
Key Event on HR Timeline	Description of HR Events	Timing Recommendations
Kick-off Meeting	Once the Master Services Agreement (MSA) has been signed, a kick-off meeting starts transition activity; attendees include UTM key stakeholders, JLL deployment team, and JLL Account Leadership	Pre-MSA signing
Impacted Employees Notified by UTM	JLL has templates available to assist with communication to impacted employees	Within 24 hours after MSA signing
Impacted Employee List presented to JLL HR	Impacted employee list will be delivered to following kick off	24 hours before JLL introductory meeting

Key Event on HR Timeline	Description of HR Events	Timing Recommendations
JLL Introduction Meeting(s)	JLL overview of partnership, services provided, “what’s in it for them”, benefits overview and next steps for impacted employees	24-72 hours after impacted employee notification
Employee Application / Getting to Know You Form	Online application (paper form available as requested). Information obtained in form will provide JLL HR with employee details needed for hire into JLL systems	Completed within a week of JLL introductory meeting
Employee Meet & Greet / Skill Assessment	Individual employee meetings to get to know the employees, best practice is in-person meetings (can accommodate phone as needed)	Completed approximately 2 weeks after employee application is completed
Delivery of Offer Decision Letters	Offer decisions and JLL Welcome letters delivered via secure email	Depending on size of team, 2-4 weeks after Meet and Greet
Offer Acceptance Window	JLL will provide a 3-5 business day window to include time for decision making and additional questions	One (1) week for offer letters
Pre-Employment Processes	Pre-employment screening will adhere to UTM prescreening thresholds, as well as JLL standards	Immediately after offer acceptance
Day One and Benefit Orientation Sessions	JLL benefits will be effective on day one for transitioning employees. Benefit Orientation sessions begin on day one, and will provide a detailed benefit overview and step-by-step enrollment process	At the date of “Go-Live”, following the 90-day transition period.

JLL takes great pride in our expertise and track record in successfully transitioning employees to our firm. In the last year, JLL has successfully transitioned more than 440.5 million square feet of operations, over 1,439 employees, across nearly 15,651 client sites around the world, and we achieved an average 4.1 out of 5.0 satisfaction rating.

Our professional and personal approach to the transition process encourages transferring employees to see outsourcing as an opportunity that will enhance their

career rather than as a threat to their position. This, in turn, has led to the retention of key staff within the outsourced businesses and the maintenance of morale and optimism. Key activities as part of our structured transition process are highlighted below:



Following transition, we will implement a first-year action plan to address key value-add initiatives at UTM. Due to its size, a sample workplan is provided as a separate attachment to our response.

People care and total equitable compensation

Our integrated team – JLL, Diversified Maintenance, and BrightView – is totally committed to keeping all UTM employees financially whole and aligned with our compensation philosophy, which establishes fair and equitable pay practices. We attract, retain, and engage the best talent with base salaries that are competitive with the market, as well as total compensation packages with ranges that enhance our pay-for-performance culture. Critical to our people care strategy:

- No employee loses a job---all current UTM employees are offered employment (subject to background and drug testing—necessary to meet legal requirements and assure student safety)
- All employees will receive equal or better compensation with JLL or its' Alliance Partners than they presently receive. The Total Equitable Compensation elements (below) have analyzed existing compensation elements to assure this item-by-item equalization with JLL's compensation plans, and will be further explained to each and every employee during a Transition phase.

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- Further, JLL assures the opportunity for training and career development for employees, which enables JLL and its partners to increase compensation to market levels as earned, for all employees. In fact, former State of Tennessee employees who became JLL employees four years ago now earn, on average, 37% higher compensation than when employed by the State.

The key elements used to define Total Equitable Compensation include base salary, longevity pay, health insurance, pension/retirement planning, sick pay, paid vacation time, and tuition benefits. These elements have been established through careful collaboration with those highly knowledgeable about existing Tennessee compensation and benefits programs.

Provided below are the Total Equitable Compensation details for impacted employees at UTM:

- **Salary**
 - JLL will offer a base pay increase to compensate for actual longevity bonus and an additional 1.9% to address differences in paid time off (sick leave plus vacation)
- **Health Insurance**
 - Employees will select their comparable plan from various JLL options
 - Differences in employee contribution will be added to base salary adjustment
- **Pension / Retirement / 401K Matching**
 - Employees will retain their State retirement benefit as they leave State employment
 - JLL will provide an 11% increase in base salary, plus a 4% match on the first 5% contributed = 15% toward their 401K contribution
- **Longevity**
 - JLL will grant recognition of total years of service equal to those earned in State employment, and add an adjustment in the first year's base compensation.
- **Educational Assistance**
 - Education assistance will be offered according to the current benefits program

Communications plan for UTM

As part of our transition approach, JLL will collaborate to develop and implement a communications plan with UTM to ensure clear and appropriate communication to all impacted stakeholders including transitioning employees, students, employees, and the public. This approach will include the following key elements:

- Clear communication of objectives
- Why JLL was selected by UTM and the State of Tennessee
- Web links for JLL and the program
- People care plan
- Local media interviews
- Social media monitoring
- Talking points when addressing specific audiences
- FAQs on what it means to partner with JLL
- A landing page that provides employees with more information:
www.jll.com/StateofTN

Managing performance for UTM

JLL's standard practice is to operate within, be accountable for, and be compensated in accordance with a performance-based management approach. This is reflected in our existing client relationships, where more than 85% of our multi-year contracts have a collaborative risk-reward structure.

Today, in our current State of Tennessee Facility Revolving Fund portfolio agreement, JLL puts 50% of our management fee at-risk based on achievement of mutually agreed KPIs, and the new contract for the universities places 100% of JLL's management fee, and 50% of our alliance partner's base management fee at risk. The age-old statement, "If you can measure it, you can't manage it", still applies.

- **Accountability:** JLL will be accountable for meeting or exceeding the State of Tennessee's Desired Outcomes for each AE, as stated in Appendix C.
- **Fact-based Performance Reporting:** For all objective performance metrics, JLL will document specific details on costs, operations, and customer satisfaction on

each AE for review and approval. More information on Performance Management reporting is outlined later in this response section

- **Subjective Performance Reporting:** JLL understands that not all Desired Outcomes are easily translated into a metric or a formula. We will accommodate each AE with subjective scoring elements to measure our performance against Desired Outcomes
- **Changes in Scoring:** We understand that the goals and objectives of each AE will change within a given year and over the long term. As necessary, we will collaborate and adjust specific performance metrics, consistent with the Desired Outcomes, over the term of the agreement upon the discretion of the AE and as mutually agreed with JLL

Ensuring alignment with Desired Outcomes

JLL proposes using the following at-risk and incentive elements to tie our performance to the results we deliver for UTM:

1. **Shared-Risk:** JLL will place 100% of our base management fee at-risk to meet the agreed upon outcomes (and 50% of our alliance partner's management fee is at risk). This will support complete alignment with UTM through ongoing collaboration. The ability to earn our Management Fee will be subject to agreement on a balanced scorecard that includes financial and operational (non-financial) performance metrics.
2. **Incentive Compensation:** JLL will have the opportunity to earn Incentive Compensation (IC) for meeting and exceeding agreed KPIs.
 - a. The IC will be funded by actual cost savings and/or cost avoidance delivered and as approved and agreed at the full discretion of UTM
 - b. The IC factors will scale as the total State of Tennessee portfolio grows.
 - c. JLL recommends that scoring and funding of any earned IC occur semi-annually (every six months)
3. **Contract Term Incentive:** JLL will have the opportunity to automatically extend the agreement past the initial five-year term if the agreed upon outcomes are met or exceeded.

Contract summary and business terms

The statewide contract is a cost management and quality improvement tool for UTM and other State institutions to use. UTM will have its own:

- Local agreement (participating addendum for UTM to the contract)
- Local governance teams between the UTM and JLL teams
- Local control by UTM over budgeting, funding and savings decisions
- Five-year contract term plus five additional one-year renewals, if earned by JLL and its Alliance Partners

As noted previously, all State employees will be offered positions and employed with equalized compensation elements defined as Total Equitable Compensation (must pass background and drug testing to qualify).

Additionally, UTM will benefit from the following:

- Pass-through of all labor and operating costs without mark-up (i.e., full transparency and decision control by UTM)
- A minimal base fee that provides for some overhead recovery
- Fee income to JLL (both base fee and incentive fee), the majority of which, is tied to its' performance – savings gain-share and KPI success measures are aligned with “fee at risk” against these success measures (100% of the JLL fee and 50% of its' Alliance Partner fees are “at-risk” against performance).
- Voluntary participation – UTM can elect all integrated service programs for full value, or select ala cart service offerings (i.e., R&M and facility management only, without custodial or grounds)
- JLL (and Alliance Partners) are required to employ all incumbent staff during the contract term; each State employee must be made-whole with Total Equitable Compensation.

Magnitude of Scaling

Our contract pricing is based on the magnitude of scaling as the contract grows and AE choose to on-board. For all participants, including the early adopters, costs are immediately reduced through the scaling factors detailed below as other AEs join the program. So, the initial participants immediately gain the benefit of scaling. Participants

will begin to see the savings benefits without the scaling, and this will improve as scaling occurs. JLL's base management fee scales down for each service as follows, enabling further cost reductions over time for all AEs:

- **Repair & Maintenance and Facilities Management:** The fee rate in cents per square foot decreases as the portfolio square footage increases via a scaling table in the pre-negotiated pricing sheets.
- **Custodial:** The fee as a percent-of-spend scales downward and decreases as the spend under management increases in this category, via a scaling table in the prenegotiated pricing sheets.
- **Grounds Maintenance:** The fee as a percent-of-spend scales down and decreases as the spend under management increases in this category, via a scaling table in the prenegotiated pricing sheets.
- **Work Order (Corrigo) and Call Center charges:** In the pricing sheets, you will see a charge per work order or phone call to the call center. These costs, included in the annual budget, are only charged when the service is used and scale downward as work order / call volumes increase.
- **Nonrecurring material and equipment costs:** While projected total volumes for each AE are variable and may not be known with certainty, we will be held accountable to show scaling down of these cost categories as the portfolio and AE-specific site volumes grow. Included are uniforms, consumables, materials, etc. Our Supply Chain group will work to ensure cost leverage and reductions are achieved.
- **Governance Costs:** Our team will scale and allocate costs across the portfolio as AEs join the program. Specific elements to scale will be collaboratively determined with the program's Advisory Board (governance). As the participating university's and state agencies begin to build volume in other services provided by JLL, we will develop a scaled-pricing framework using the very same elements we have provided within the State's RFP scope of services.
- **Benefits Administration Fee:** A modest fee percentage of base staff salaries will be charged to cover the cost of direct administration for providing and managing employee benefits. This percentage scales down as participation in the State contract increases, providing more savings as more schools onboard to the contract.

Appendix A – Summary of Budget and Baseline Analysis

Cost Comparison by Fund				
Fund Description	JLL Budget	UTM Budget	Delta \$	%
Physical Plant (E&G)				
Custodial	\$ 1,699,131	\$ 1,745,239	\$ (46,108)	-2.64%
HVAC	\$ 1,579,706	\$ 1,819,436	\$ (239,730)	-13.18%
Building Services*			\$ -	
Grounds	\$ 384,507	\$ 505,490	\$ (120,983)	-23.93%
Mgmt/Srvc Desk	\$ 64,764	\$ -	\$ 64,764	
Contract Admin Fee	\$ 127,126		\$ 127,126	
Fee	\$ 191,482		\$ 191,482	
Governance Cost	\$ 52,241		\$ 52,241	
Subtotal	\$ 4,098,957	\$ 4,070,165	\$ 28,792	0.71%
Auxiliary - Housing				
Custodial <i>(Note 7)</i>	\$ 678,887	\$ 647,919	\$ 30,968	4.78%
Auxiliary Maintenance	\$ 554,919	\$ 857,367	\$ (302,448)	-35.28%
Building Services			\$ -	
Grounds	\$ 66,399	\$ 80,000	\$ (13,601)	-17.00%
Mgmt/Srvc Desk	\$ 11,880	\$ -	\$ 11,880	
Contract Admin Fee	\$ 31,639		\$ 31,639	
Fee	\$ 100,356		\$ 100,356	
Governance Cost	\$ 18,747		\$ 18,747	
Subtotal	\$ 1,462,828	\$ 1,585,286	\$ (122,458)	-7.72%
Totals	\$ 5,561,785	\$ 5,655,451	\$ (93,666)	-1.66%

*Combined HVAC and Building Services together

JLL endeavored to bring forward the best understanding and assumptions possible to the baseline components that were provided.

As the chart above demonstrates, we identify 1.66% in immediate savings, and believe savings in future years could trend upwards to 10% with a better understanding of partial vs full scope of provider, and baseline carve-outs provided.

Based upon review of the data provided, APPA level metrics, our experience, and an understanding that calculating costs with partial scopes can be a difficult undertaking, we have made assumptions about the baseline information provided.

Future savings are also achieved by including the central infrastructure and plant in the scope to be managed by the FM team, rather than carving out this scope to be managed by a stay-behind UT Martin team. Efficiency is gained by having a single team managing all infrastructure elements. (See Appendix B for JLL's experience/expertise in managing large, complex central plant elements.)

AUX Custodial Baseline - In our analysis of the revised AUX custodial baseline provided (\$380,837), JLL made adjustments for (1) labor and (2) materials. When reviewing the salaries and FTEs for custodian supervisor, custodians, and student workers provided, JLL calculated base wages of \$333,717. We then added a 45.11% fringe benefit factor (on Custodians and Custodian Supervisor), which brought estimated labor to \$460,831. This analysis was based off of the UT Martin staffing roster provided.

Additionally, we added \$0.15/GSF for custodial materials (applied to 1,247,254 AUX SF). This equated to \$187,088 in custodial materials. When adding these labor and materials together this equated to a revised AUX Custodial baseline of \$647,919. In comparing our proposed solution we have utilized this as an adjusted total UTM baseline.

- Vacancies - we have assumed only two vacancies within the AUX Maintenance team that were identified in Housing staffing roster.
- Staffing Roster - JLL was not provided a staffing roster for the Physical Plant (E&G). Therefore, we have based our initial staffing estimate utilizing the organizational chart provided by UT Martin as well as APPA standard metrics.
- Wages (we have made the following assumptions for E&G/Physical Plant staffing since wages and staffing rosters were not provided from the University).
 - E&G/Physical Plant O&M Wages - JLL has utilized the Department of Labor, area wage determination to determine hourly wages for operations and maintenance staff within E&G.
 - E&G Custodial Wages - JLL's partner Diversified utilized the average hourly rates for the custodians working within the Housing AUX for E&G/Physical Plant custodian wages.
 - E&G Grounds - JLL partner Brightview used an overall average across the entire UT system as an average hourly rate for the grounds positions under E&G.
- Management Administrative/Work Order Clerk Staff – as UT Martin withheld administration/management from its baseline provided, JLL has aligned with this and removed these positions. However, we suggest further discussion with UT Martin about these positions, as certain management positions are needed to supervise the labor within the on-site teams, and it would not make sense to duplicate these positions and costs between JLL's team and any stay-behind team at UT Martin.

Price Assumptions

Assumptions include:

- Full UTM campus
- Full services:

-
- Repairs and maintenance and facility management (sourcing, accounting, training, best practice programs, etc.)
 - Custodial (delivery, training, best practices)
 - Grounds (delivery, training, best practices)
 - Fiscal Year 2016 Operating Cost Baseline as adjusted – (see analysis above)
 - Labor salary and burden costs as equalized through Total Equitable Compensation
 - Supplies and materials included
 - All insurance, fees included
 - Use of existing UTM equipment
 - Total transparency and pass-through of all operating costs

Appendix B – Central Plant Management Case Studies

Provided on the following pages are case studies highlighting JLL's deep experience in central plant management.

Merck



JLL supports several major Merck sites with robust utility systems. The Kenilworth, Rahway, Upper Gwynedd and West Point are large industrial campuses connected by large utility systems to create and distribute electricity, water, process water, natural gas and compressed air. For example, the 100+ building campus at West Point is connected by over 61 miles of underground piping.

Electrical

JLL manages all electrical systems inside Merck properties, or electrical systems 4160 volts and down. Merck's large sites also have significant power generation capabilities as well. For example West Point's generation capacity at 40 megawatts and at Rahway, solar panels generate over 420,000 kilowatt hours and microturbines generate over 350,000 kw/year.

Wastewater

Merck's Rahway campus operates a wastewater facility that provides "pre" treatment before being piped into Rahway's sewage treatment system. The site consumed ~420,000,000 gallons of water.

Steam

Merck's major campuses at Rahway, West Point and Kennilworth all have large, complex steam production and distribution facilities. For example, at Rahway, JLL oversees a powerhouse of 10 boilers with a total capacity of 1.2 million lbs./hr. Typical boiler operation is to produce steam at 900 psi, 810° F, and route it to one or more of the Power Plant turbine-generators to generate electricity. Site steam is distributed through 19 miles of steam and condensate return piping. Rahway recovers as much steam condensate as possible for reuse in the boilers. Approximately 125 Condensate Recovery Units (CRU), consisting of a vented collection tank and transfer pumps, are strategically located throughout the site. Depending on season and system conditions, 40% to 60% of the steam condensate is collected and reused.

Water

JLL's ensures all potable drinking water is pure, clean and compliant with regulatory specifications and limits. This includes water testing, pump and distribution system

maintenance and service coordination. Water systems can also span multiple municipal jurisdictions.

For example, at Merck's Rahway campus, JLL's service team must coordinate regular services and emergency response with two municipalities (Rahway and Linden, NJ) that supply the campus with electricity and potable water. JLL is also responsible for maintenance and repair of industrial filtered water systems. At Merck Rahway, JLL maintains a filtered water system that includes a 25,000 gallon raw water tank, a 10,000 gallon reverse osmosis (RO) feed water tanks and two 40,000-gallon deionized water storage tanks. This system is capable of generating 1,500 gallons of deionized (DI) water per minute.

HVAC

JLL operates and services all types of HVAC equipment include small split systems, rooftop units and large central chiller plants. For example, there are twenty-nine (29) total comfort cooling chillers in the central plants. Seventeen (17) of these chillers are single pass steam absorption type, which accounts for 63.3% of the total design installed cooling capacity. The remaining twelve (12) chillers are electric centrifugal type, accounting for 36.7% of the total design installed cooling capacity.

Utilities Management

JLL provides comprehensive utilities management services for BMS, including general maintenance, operation, condition assessments, meter reading, and utility locator services. JLL provides an annual report summarizing the performance of all major utility systems; analyzing maintenance issues and recommending upgrades or programs as required. We include the business case for recommended improvements, upgrades and replacements, an annual analysis of energy performance, and a plan for energy and water reduction. JLL manages a leak detection program for all major utility systems, including water, steam, natural gas, steam distribution systems and bulk gas distribution systems and compressed air distribution systems. Larger sites include utility tunnel systems that transports steam, chilled water, gas and compressed air from utility plants to campus buildings.

HVAC

JLL engineering teams operate, maintain and repair multiple chiller systems for BMS locations. Services also include process chiller systems that support sensitive manufacturing and research environments.

- Central utility plant with 12,000 tons of chiller capacity and 18,000-ton capacity cooling tower system (Lawrenceville, NJ).
- 3 York 1750-ton chillers (Devers, MA)
- Four air cooled chillers - 1,310 tons of chiller capacity (Bloomsbury, NJ)
- 19,000 tons of chiller capacity (process and comfort) and cooling towers with 70,000 GPM capacity (New Brunswick, NJ)
- One (1) 1,100 ton centrifugal chiller and four (4) Oil free screw compressors over 6,000 tons of chiller capacity (Manati, PR)

Electrical

JLL provides operations, maintenance and repair to all electrical systems on BMS property. In Lawrenceville, NJ, this includes a cogeneration plant with 4.3 MW capacity and solar powered heating and photo-voltaic electrical generation in Lawrenceville, NJ. The Cogen Plant in New Brunswick is capable of producing 50% of the site's power needs. For electrical generation equipment, JLL provides emission and stack monitoring services (including maintenance of stack monitoring equipment). Power is distributed throughout the campus by underground 5 KV electrical distribution system. JLL manages emergency power systems including 5 MW generators in Devers, MA, 8 MW generators in Humacao, PR, and two diesel generators in Bloomsbury, MJ.

Wastewater

BMS' portfolio includes multiple industrial and manufacturing areas where JLL is responsible for managing, coordinating and executing effluent and waste water treatment systems to include collection, treatment, transport, handling analysis and documentation. The site wastewater treatment plant is used to treat wastewater streams at all research and manufacturing locations. At the Hopewell, NJ site, a monthly average of 25,000 gallons per day of sanitary wastewater is discharged to the Stony Brook Regional Sewer Authority. This wastewater stream includes pre-treated sanitary wastewater, industrial wastewater and biologics wastewater. The site has two infiltration/percolation ponds used for recharging the ground water supply and as a source of fire protection water and HVAC make-up water. Treated wastewater from the WWTP is discharged to the first pond. And then to the second larger pond that is considerably larger and holds approximately 12.5 million gallons of water.

Steam

JLL manages steam production and distribution systems at most major BMS locations. Our services include operations, maintenance and repair to steam and humidification systems, such as high/low pressure boiler operations, clean steam generation systems, heat exchangers and high temperature hot water heaters.

Water

JLL operates and maintains all potable water systems on BMS property. Water supply for BMS locations often comes from a variety of sources. For example, there are three water supply systems at the BMS Hopewell, NJ site. These include potable water supply wells with water treatment units, e.g., air strippers, and associated supply piping to buildings and equipment; pond water supply used for fire protection, HVAC make-up, including pumps and associated piping and controls; and reclaimed water system supply to HVAC systems and associated piping and controls. At BMS Hopewell, JLL manages, coordinates and executes a ground water treatment program to include pumping, collection, testing, analysis, treatment, monitoring, discharge and documentation, in accordance with BMS procedural documents and regulatory requirements. Ensure planned maintenance, repair and inspection program is in place and executed for equipment included but not limited to meters, wells, ground water processing and pumping equipment, generators, blowers, alarm systems, SCADA related to ground water facilities, and appurtenances. In addition to potable water, JLL teams also manage specialized laboratory process water systems and equipment, including reverse osmosis, deionized water, and demineralized water and storage tanks.

General Motors



Utilities Management

JLL provides comprehensive utilities management services for GM, including general maintenance, operation, condition assessments, and meter reading. JLL manages a leak detection program for all major utility systems, including water, steam, natural gas and compressed air distribution systems.

Electrical

At GM Orion, JLL manages the Co-Gen, supplying 4,160 volts to the facility. The Co-Gen system is made up of five (5) 20 cylinder CAT Methane gas generators which are supplied gas from two (2) neighboring landfills. These generators produce 8 megawatts of electricity for the facility, initiatives which allow GM - Lake Orion to improve their environmental impact.

Wastewater

At GM Orion, JLL manages the wastewater facility that provides pre-treatment, before being piped to the city of Detroit wastewater treatment system. The site treats and discharges 700,000 gallons of pre-treated water per week. At Baltimore and Romulus, JLL manages the wastewater facility that provides pre-treatment, before being piped to the city wastewater treatment systems. The sites treat and discharge a varying amount depending on process activities, generally ranging in 700,000 to 900,000 gallons of pre-treated water per week.

Baltimore Wastewater:

- (3) 12000 gal storage tanks
- (1) 3000 gal process tank
- (1) 2000 gal waste oil tank

Romulus Wastewater:

- Polish tank holds 2,000 gallons of Process water.
- DAF holds 500-1000 gallons of process water and this unit is gravity fed.
- Ultrafiltration process tank hold 5,000 gallons of process water.
- Cookers 1-4 holds 3,000 gallons each of used oils. To be offloaded
- Scum holding holds 5,000 gallons of used oils Transferred from DAF via Oil separator (outside).
- Caustic tank holds 5,000 gallons.
- Polymer (liquid) hold 5,000 gallons.
- Aluminum sulfate hold 5,000 gallons.
- Ultrafiltration cleaning tank holds 1,000 gallons.
- Ultrafiltration chemical feed tank for cleaning solution holds 20 gallons.

Steam

At GM Orion, JLL oversees a powerhouse consisting of two (2) main boilers, producing 245 lbs. of steam to a 4,000 ton Carrier chiller. The steam is used to chill water to an average of 45 degrees to send to the facility. Maintenance is provided for two (2) 1,000 ton York chillers that supply 42 degree water to the paint elpo system. Paint shop is also supplied 180 degree water by two (2) 500,000 BTU electric/natural gas boilers. JLL PEC team manages steam production and distribution systems at the GM Pontiac site that supports both testing processes and comfort systems.

- (3) 36.8 MMBtu/hr Gas Fired Boilers with associated water treatment equipment, economizer, stacks.
- Condensate recovery system

HVAC

At GM Orion, JLL facilities manages several types of HVAC units at Orion Assembly. Servicing is provided for eighty-seven (87) active RTU's within a closed loop system, three (3) 15 ton York units, and three (3) 20 ton Mammoth units. Additionally, there are six (6) individual package units for in-plant office cooling, most of which are York and Carrier. At the GM Baltimore, PEC and Romulus locations, JLL operates and services all types of HVAC equipment include small split systems, rooftop units and large central chiller plants. JLL engineering team at PEC operates, maintains and repairs multiple chiller systems.

- (2) Heating Hot Water System Heat Exchangers (PEC)
- 35 degree Chillers (5 – 1600 Ton York High Pressure Centrifugal Chillers) with Glycol make-up. (PEC)
- (4) Building Centrifugal Chillers providing 6950 tons of capacity (Romulus)
- (6) Building Centrifugal Chillers providing 3900 tons of capacity (Romulus)
- Multiple Cooling Tower Systems with associated pumps, side stream filters

Groundwater Treatment

At GM in Lansing MI, JLL manages, coordinates and executes a ground water treatment program to include pumping, filtration, treatment, analyzing and recording data, discharge and compliance documentation, in accordance with GM's Environmental and Remediation procedures and regulatory requirements. Ensure planned maintenance, repair and inspection program is in place and executed for equipment included but not limited to meters, wells, ground water processing, carbon filter changes, pumping equipment and alarm systems.

Process Equipment Support

In addition to HVAC, the JLL team also provides support for process chiller systems and central exhaust systems that support sensitive manufacturing and research environments on a 24/7/365 basis.

- (4) 10 MMBtu/hr Regenerative Thermal Oxidizers, which process all of the exhaust from engine testing, eliminating carbon monoxide and unburned hydrocarbons from entering the atmosphere. (PEC)
- (2) Ingersoll Rand Air Dryers Heated Desiccant Instrument Air Dryers (PEC)
- (2) Air Technologies Zero Air Generators (PEC)
- (2) 200 Ton 600 HP Frick -55 degree Syltherm Chillers with Molecular Sieve (PEC)
- (4) 850 Ton Process Chillers (Romulus)
- Climatic test capability from 80C to -40C (all produced by JLL maintained process support equipment)
- Combustion Air and Test Cell AHU support for 120+ engine and transmission test cells (PEC)
- (1) 10,000 gallon Reverse Osmosis water treatment system
- Underground Fuel Farm– Maintenance, operation, repair, inventory, ordering, financial, forecasting, fuel properties management and quality standards for 26 underground storage tanks with a capacity of 255,000 gallons (PEC)

APPENDIX C - REQUIREMENTS ROADMAP

Desired Outcomes	Performance	
	Objective	Standard
<p style="text-align: center;">1</p> <p style="text-align: center;">Provide safe, appealing and high quality facilities and grounds through operational excellence</p>	Ensure both interior and exterior spaces meet agreed-upon appearance standards	Establish standards and scope for facilities and grounds maintenance within X months Validate work against standards, correct deviations and report through Quality Assurance (QA) process X often.
	Meet or exceed agreed-upon service levels for routine and priority service requests	Review / examine work requests for Remedial Maintenance (RM) and other requests by priority and measure against agreed-upon standards
	Maximize asset life cycle	Inventory all assets and determine asset conditions and age within X months and update annually
		Prescribe Preventative Maintenance (PM) and schedules for all assets and generate PM schedule within X months and update as agreed
		Perform Cost-Benefit analysis for RM and PM identified issues to repair vs. replace, and implement agreed-upon corrective actions
	Determine the condition of the facilities under management	Provide facility inspections of all facilities annually
	Ensure continuity of systems and services	Eliminate controllable unplanned downtime
	Adhere to regulatory and code requirements	100% of applicable staff will attend codes training
		Reduce violations to zero within agreed time period and maintain thereafter
	Utilize safety and risk management programs to reduce incidents	100% of staff attend applicable safety training
Reduce safety incidents to level below previous year		
<p style="text-align: center;">2</p> <p style="text-align: center;">Exhibit good stewardship of state resources</p>	Achieve optimal cost savings within responsible budgets	Achieve annual X% savings of approved annual plan
		Achieve X% diversity spend of total annual spend
		Annually establish benchmarked budget standards
	Identify current space usage opportunities	Biannual reporting of all buildings \geq 20k sq. ft.
	Reduce the State's environmental footprint	Reduce energy consumption per sq. ft. by X% of baseline
		Reduce water usage by X% of baseline
		Reduce landfill waste by X% of baseline
		Establish and maintain site specific recycling programs where appropriate

		100% of storm / waste water management permits by due date
		Storm / waste water incidents responded
3 Foster an environment and culture that promotes flexible customer centric solutions	Be accountable for service delivery to requestors and affected parties	Work order survey response about communication results average equal satisfied or very satisfied
		All mutually agreed scheduled reports issued on time
		Follow mutually agreed communication standards for: - unique scheduled events - recurring events - emergency / urgent events
	Improve customer satisfaction	Achieve / maintain a customer satisfaction level of "X" or greater
	Establish a customer service training program	All employees complete appropriate customer service training annually
4 Enable employees to be engaged, motivated and innovative	Provide training programs and cross-training at all levels	Achieve a standard of X% improvement over year 1 baseline on employee engagement survey that incorporates all Objectives
	Provide employment growth opportunities	
	Provide guardrails to empower employees	
	Establish and maintain a high level of employee morale to ensure engagement	
5 Sustain collaboration, transparency and programs that inspire public trust	Mutually develop and maintain required reporting that meets or exceeds the needs of all State entities	All specified reports submitted by due date
	Publicly communicate accurate and informative results of key metrics	Monthly reporting of key projects and cost savings, aggregated and published quarterly