

ADDENDUM NO. 01

REQUEST FOR QUALIFICATIONS (RFQ) F25-7013-39A
BUILDING 2 RENOVATION ENGINEERING AND DESIGN SERVICES

Kansas City Area Transportation Authority
1350 E. 17th Street
Kansas City, Missouri 64108

Jen Webb, Buyer • jwebb@kcata.org • 816-346-0368

Issue Date: July 8, 2025

This Addendum is hereby made a part of the Request for Qualifications (RFQ) and Project Documents to the same extent as if it was originally included therein and is intended to change and/or interpret the RFQ documents by additions, deletions, clarifications, or corrections. The Contractor shall acknowledge receipt of this Addendum in the proposal submittals.

PROJECT INFORMATION

KCATA has design documents that will be available on a KCATA FTP site. Firms interested in accessing the site must email Jen Webb at jwebb@kcata.org and Denise Adams at dadams@kcata.org. Your email will be provided to the IT department, and you will receive a link to our SharePoint site.

Pre-proposal conference attendees will automatically receive this email from KCATA's IT Department.

QUESTIONS FROM PROPOSERS

1. Q: When is the construction project expected to go to bid? What is estimated start date of construction?
A: The tentative start date for construction is the first quarter of 2027
2. Q: On page 26 of the RFQ, it states that the Technical Proposal has a page limit of 25 pages, but then says, "The Proposer may choose to allocate pages between any of the evaluation criteria as long as the Proposal does not exceed 20 pages." Can you confirm the page limit of the technical proposal?
A: The Technical Proposal limit is 25 pages.
3. Q: Are wet signatures required for both prime and subcontractor forms in Volume 2 - Contractual? Can scans of originals be accepted instead?
A: Scans of subcontractor documents are accepted for the submission. We will request the originals if your firm is awarded the contract.
4. Q: Has a budget been established for the project? If so, can you share that information?
A: The project budget will be shared with the selected consultant.
5. Q: Are there anticipated dates of milestones and deliverables for the scope of work? And what are the expected durations for the phases of work?

A: It is up to the consultant to determine what they would anticipate expected durations for each phase of work. Tentatively, KCATA expects durations to be as follows:

- Study Phase – approximately 5-6 months
- Preliminary Design (30%) – approximately 5-6 months
- Final Design (60%) – approximately 4-5 months
- Bid Plans (ready for invitation to bid) – approximately 4-5 months

6. Q: Is the 2022 Assessment report available for review?

A: There is a 2019 Assessment report available for review

7. Q: RFQ notes 10% DBE participation goal, Sample Contract para 12.C notes a 24% commitment of DBE firms. Please confirm DBE participation goal.

A: The DBE participation goal is 10%. The contract will be updated with the awarded Consultant's actual DBE commitment.

8. Q: RFQ para 4.3 E.5.c notes to include copies of Missouri licenses for key personnel. Do these copies count toward the 25-page limit?

A: Additional Lists of References, resumé, licenses, certifications, and background information (maximum of two pages per individual) are excluded from the page count and may be submitted as an Appendix.

9. Q: RFQ para 2.8 D.2.m. and elsewhere lists "project integration, testing and certification listing". Please confirm if this refers to integration of MEP and controls systems. Please also clarify if there are specific certifications desired.

A: Project integration and testing refers to MEP systems, the fire suppression systems, the CNG/CO/Hydrogen detection system and any other system that connects to the building automation system.

10. Q: RFQ para 2.8 D.4.h lists "Formal Independent Cost Estimate". Please confirm if a 3rd party cost estimator included on the team meets KCATA's intent of a "Formal Independent" Cost Estimate.

A: The Independent Cost Estimate will be generated by the consultant team. The estimate should be based upon current market conditions and not just a Means Cost Estimate.

11. Q: RFQ para 2.4.A notes a required discipline for "information technology". Please confirm the extent of IT services if beyond C&C's services.

A: There are multiple IT systems in the building. The consultant is expected to have a team member knowledgeable in low voltage and data systems and will be expected to work with the KCATA IT department on any IT equipment that is present in Building 2. Additionally, it is the intent to establish cellular connectivity through building 2 with an expanded cellular extender system.

12. Q: RFQ para 2.8.D.1.e and elsewhere: Please clarify KCATA's goal and intent for "KCATA fleet management concepts".

A: This refers to phasing during construction to accommodate KCATA Fleet Management and operations.

13. Q: RFQ para 2.8.D.1.g and elsewhere: Please clarify KCATA's goal and intent of "Project construction delivery concepts".

A: This refers to phasing during construction to accommodate KCATA Fleet Management and operations. The project delivery method will be design / bid / build.

14. Q: RFQ para 2.8.D.2.k and elsewhere: Please clarify if "spare parts recommendations" is referring to spare parts for fleet vehicles or for M/E/P/FP systems.

A: This is referring to Building 2 MEP systems.

ATTACHMENTS

- Pre-Proposal Conference Attendance List
- "Receipt of Addenda" form
- Anticipated Project Schedule
- Building 2 Assessment (2019)

KANSAS CITY AREA TRANSPORTATION AUTHORITY

RFQ #F25-7013-39A

Kansas City Area Transportation (KCATA) Building 2 Renovation Engineering and Design Services

KCATA's Breen Large Conference Room ~ 1200 East 18th Street, KCMO, 64108

On-Site Tour @ 1:30 p.m.

Pre-Proposal Conference @ 2:30 p.m.

ATTENDEE LIST (IN-PERSON AND MICROSOFT TEAMS)

Name	Firm	Email	DBE Status?
Jeremy Nolen	Farnsworth Group	jnolen@f-w.com	No
Scott Perkins	Prairie Engineers	sperkins@prairieengineers.com	Yes
Sonia Garapaty	FSC, Inc.	sgarapaty@fsc-inc.com	Yes
Carrera Kauszler	Cook Flatt & Strobel Engineers	ckauszler@cfse.com	No
Aaron Bresette	HDR	Aaron.bresette@hdrinc.com	No
Tim Sandmeyer	HDR	Tim.sandmeyer@hdrinc.com	No
Jonathan Brack	HDR	Jonathan.brack@hdrinc.com	No
Nate Witte	HDR	Nathan.witte@hdrinc.com	No
Don Gardner	Terracon	Don.gardner@terracon.com	No
Emily Marsh	Wellner A+E	emarsh@wellner.com	Yes
Cory Wilson	Wellner A+E	cwilson@wellner.com	Yes
Aaron Aday	Dake Wells Architecture	aaday@dake-wells.com	No
Lynden Peters	Arcadis	Lynden.peters@arcadis.com	Np
Kelly Stindt	SFS Architecture	kstindt@sfsarch.com	No
Kerry Newman	SFS Architecture	knewman@sfsarch.com	No
Frank Delgado	AECOM	Frank.delgado@aecom.com	No
Ryan Highfill	AECOM	Ryan.highfill@aecom.com	No
Rushil Mojidra	AECOM	Rushil.mojidra@aecom.com	No
Bill Yord	KCATA	byord@kcata.org	No
Jen Webb	KCATA	jwebb@kcata.org	No
Lee Barnes, Jr.	KCATA	lbarnes@kcata.org	No
Laura Nies	Burns & McDonnell	lnies@burnsmcd.com	No
John Cullinan	KCATA	jcullinan@kcata.org	No
Linda Clark	KCATA	lclark@kcata.org	No
Denise Adams	KCATA	dadams@kcata.org	No

RECEIPT OF ADDENDA

REQUEST FOR QUALIFICATIONS (RFQ) F25-7013-39A
BUILDING 2 RENOVATION ENGINEERING AND DESIGN SERVICES

Kansas City Area Transportation Authority
1350 E. 17th Street
Kansas City, Missouri 64108

Proposers shall return this **RECEIPT OF ADDENDA** form when submitting their proposal. The form shall be signed and dated by an authorized representative of the firm. Failure to submit this form may deem the Bidder non-responsive.

We hereby acknowledge that the Addendum noted below has been received.

Addendum #1 Dated July 8, 2025

Date Received _____

Addendum #2 Dated _____

Date Received _____

Company Name _____

Date _____

Address/City/State/Zip _____

Authorized Signature _____

Printed Name _____

Telephone _____

Email _____

2025													2026												2027												2028											
SCHEDULE ITEM																																																
GRANT APPLICATION (PMO, Grants)																																																
GRANT PRE-AWARD AUTHORITY (Grants)																																																
PROJECT CHARTER DRAFTED																																																
DESIGN RFP ISSUED (Procurement)																																																
DESIGN ENGINEER SELECTED (Procurement, PMO, Facilities)																																																
DESIGN NTP (Procurement)																																																
CONCEPTUAL DESIGN STUDY PHASE																																																
PRELIMINARY DESIGN (30%)																																																
FINAL DESIGN (60%)																																																
BID PLANS (100%)																																																
PROCUREMENT IFB (PMO, Procurement)																																																
CONTRACTOR SELECTION (Procurement, PMO, Facilities)																																																
NTP CONSTRUCTION (Procurement)																																																
CONTRACTOR MOBILIZATION																																																
BUILDING 2 ROOF REPLACEMENT																																																
SOLAR ON ROOF INSTALLATION																																																
SOLAR TESTING AND INTEGRATION																																																
ELECTRICAL INFRASTRUCTURE INSTALLATION																																																
ELECTRICAL TESTING AND INTEGRATION																																																
FIRE ALARM/CNG/CO/LITHIUM DETECTION SYSTEM INSTALLATION																																																
FIRE ALARM/CNG/CO/LITHIUM DETECTION SYSTEM TESTING AND INTEGRATION																																																
AIR HANDLING UNITS INSTALLED																																																
AHU TESTING AND INTEGRATION																																																
CONCRETE FLOOR REPAIR (AS NEEDED)																																																
SUBSTANTIAL COMPLETION																																																
PUNCH LIST																																																
PROJECT CLOSE OUT																																																



Building No. 2 Assessment

Phase I and Interim Phase 2 | December 2019



Kansas City Area Transportation Authority (KCATA)

Building No. 2 Assessment

Phase 1 and Interim Phase 2 | December 2019



KCATA President & CEO

Robbie Makinen, *President & CEO*

KCATA Board of Commissioners

The KCATA is governed by a 10-member Board of Commissioners, five from Missouri and five from Kansas. The Board exercises its responsibility by adopting all general policies, including adoption of annual capital and operating budgets.

Daniel Serda, *Chairman, Kansas City, Kansas*

David Bower, *Vice Chairman, Jackson County, Missouri*

Anne Post, *Secretary, Kansas City, Missouri*

Melissa Bynum, *Treasurer, Wyandotte County, Kansas*

Jim Allen, *Johnson County, Kansas*

Nancy Bauder, *Leavenworth County, Kansas*

Joe Peterson, *Kansas City, Kansas*

Louie A. Wright, *Clay County, Missouri*

KCATA Staff

Dick Jarrold, *Senior Vice President*

Keith Sanders, *Chief Engineer*

Consultant Team - TranSystems Corporation

Sarah Frost, AICP, *Project Manager*

Jeff Reeder, PE, *Project Structural Engineer*

Marcia Bolton, PE, *Project Structural Engineer*

James van Eman, Architect, *Project Architect*

Monica Santos, PE, *Project Electrical Engineer*

Matt Kassaye, PE, *Project Mechanical Engineer*

TABLE OF CONTENTS

Section 1 Introduction	1
Assessment Purpose	1
Report Outline	1
Section 2 Facility Assessment	2
Summary	2
Architectural.....	3
Structural	5
Electrical.....	6
Mechanical/Plumbing.....	13
Section 3 Facility Improvement Analysis	22
Scenario 1: Demolish Building 2 and replace with new enclosed building	22
Scenario 2: Demolish Building 2 and replace with new open air canopy	24
Scenario 3: Rehabilitate Building 2 for additional ten-year service life	25
Scenario 4: Renovate portion of Building 2 along 18th Street to create leasable space.....	26
Scenario 4A: Remove portion of Building 2 along 18th Street and replace with leasable space ...	28
Scenario 5: Rehabilitate Building 2 to address energy efficiency	30
Scenario 6: Demolish and replace Building 2 with open air parking	31
Summary of Scenarios.....	31

SECTION 1 | INTRODUCTION

Assessment Purpose

KCATA contracted with **TranSystems** and **Antella Consulting Engineers** to assist in developing potential short-term and long-term strategic plans for the Building No. 2 (Building 2). KCATA is seeking assistance in evaluating the existing facility regarding architectural, structural, electrical, mechanical, and plumbing systems and reviewing options to support the current Building 2 operations. This assessment includes a review of previous reports relevant to Building 2 in addition to site observations and review of existing drawings.

Note: This project is exclusive to Building 2 and does not include the driver's bridge on the north of the building or an evaluation of the sound control structure and the training facilities.

Report Outline

This project report includes two phases:

- *Phase 1:* Evaluation of existing building and repair recommendations for a five-year scenario to extend facility useful life to 2025. Conceptual level cost estimates are provided for the repair recommendations.
- *Phase 2:* Analyses for six different scenarios and options to support current operations performed in Building 2. Each scenario includes assumptions, recommendations, and conceptual level cost estimates.

SECTION 2 | FACILITY ASSESSMENT

The building assessment is organized in the following primary sections:

- Architectural
- Structural
- Electrical
- Mechanical/Plumbing

Summary

KCATA staff met with the TranSystems and Antella Consulting Engineering project team on October 21, 2019 to conduct a kick-off meeting for the Building 2 Assessment project. During this meeting, priorities and expectations were reviewed for the project. Prior to the kick-off meeting, the project team performed an initial site visit on October 18, 2019 to review the existing conditions of the facility. KCATA also provided the following documents to the project team for review:

- Building 2 Record Drawings (6/15/1977)
- Central Services Center Facilities Audit, Phase 1 (Wellner Architects, 3/31/2017)
- Central Services Center Facilities Audit, Phase 2 (Wellner Architects, 6/23/2018)
- Capital Improvements and Central Service Center Arrangement Options (TranSystems, 8/10/2018)

The Phase 1 report provides conclusions developed from the review of these sources and project team observations. KCATA can utilize these conclusions to make short-term facility decisions for Building 2. Projected total building cost for Phase 1 to rehabilitate the building for an additional five-year service life is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$8,000
B	Building Shell	\$14,885
C	Interiors	\$0
D	Mechanical/Electrical/Plumbing	\$676,035
E	Other	\$0
	Subtotal	\$698,920
	Total ¹	\$1,164,367

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

The Phase 2 report addresses Building 2 modification scenarios for future operations. KCATA provided six scenarios for the project team to consider and added an additional scenario, Scenario 4A, at the October kick-off meeting. The scenarios were provided by KCATA to address possible options to support the current operations. Each scenario analysis includes a conceptual level cost estimate, design assumptions, and anticipated useful life. The Phase 2 report incorporates conclusions developed from Phase 1 observations, discussions with KCATA, and analyses of scenarios. KCATA can utilize these conclusions to make long-term facility decisions for Building 2.

Architectural

The Building 2 building envelope appears to be sound and can continue to provide an additional five years of service if continually monitored and maintained. It will be essential to address localized envelope failures promptly to maintain a suitable storage environment for KCATA's fleet.

Most of the functional, non-cosmetic recommendations of previous reports should be addressed within a long-term rehabilitation of the building. However, for this short-term five-year horizon, most recommendations would be investments with resulting benefits beyond this time frame. These items are listed following site observations.

Site Observation

Some items observed by the project team should be addressed immediately:

- *Roof Condition:* The roof is at end of expected service life but functional. Staff has not reported any roof leaks. Several localized areas of stone ballast are scoured exposing the roof membrane. Additional ballast should be provided and evenly distributed within the affected area.
- *Drain Inlet Baskets:* Some minor debris is present. All baskets should be removed and the inlets cleared. The baskets should be reattached and secured.
- *Downspouts:* Roof drains and downspouts are internal. Staff has not reported pipes leaking except at those vertical downspouts that have been damaged by vehicles. All damaged and missing downspouts sections should be replaced with cast iron or plastic pipe and reconnected to the in-floor receiver.
- *Protection:* Protection should be installed at each of the vertical downspouts within the building, either bollards or steel plate armor.
- *Roof Drains:* All roof drains/downspouts should be flushed to verify they are operating properly and without leaking inside the building.
- *Parapet Sealant Joints:* Precast panel-to-panel joint sealant is at end of its useful life. Sealant is pulling away from concrete and could allow water to enter the joint. Top of parapet joints could be addressed separately as a temporary measure or in conjunction with the panel vertical joints. (See item 2-A12 below)
- *Leak at Stair 5 Roof Access:* Staff described a leak where rain water enters the upper level of the stair tower near the roof door and migrates inside the wall face to ground level. The project team did not personally observe this leak. Further investigation would be required to determine a course of action.
- *Floor Slab Damage:* Localized spalling of interior concrete surface was observed. It is recommended that KCATA continue the practice of small area removal/replacement as has been performed annually.

Previous Reports

In the Wellner *Phase 1 Report - Exterior Building Elements*, the following items were noted as failed, failing, at end of service life, or non-functional:

Report Item	Recommendation
Gridline 10 and 'E' vertical expansion joints sealant is failing; remove and replace sealant and metal covers	Not essential for five-year scenario
Man doors show signs of rust and deterioration	Cosmetic - No action for five-year scenario
Roof condition consistent with 20+ year old roof	Replacement not necessary for five-year scenario

In the Wellner *Phase 2 Report - Architectural*, the following items were noted:

Report	Report Item	Recommendation
2-A07	Repair/refinish steel pipe bollards	Cosmetic - Could be addressed by maintenance staff
2-A08	Damaged or missing overhead door weatherstrip	Continue current budgeted overhead door repair/replacement strategy
2-A09	Seal open wall joints and wall-to-floor joints	Could be addressed by maintenance staff
2-A10	Foundation wall spalling	Cosmetic - No action for five-year scenario
2-A11	Door rust	Cosmetic - No action for five-year scenario
2-A12	Sealant is failing at all precast panel joints; sealant has lost resilience and is pulling away from concrete panels	Complete removal and replacement not essential for five-year life. Maintenance staff could monitor areas of air and water entry and provide spot repairs.
2-A14	Concrete floor damage	See <i>Floor Slab Damage</i> above
2-A15	Dirty overhead door header	Cosmetic - No action required
2-A16	Damaged overhead door header	Cosmetic - No action required
2-A20	Crack in precast concrete panel	Cosmetic - No action required
2-A21	Crack in precast soffit panel	Cosmetic - No action required
2-A22	Dirty concrete header panel	Cosmetic - No action required
2-A23	Damaged precast panel corner	Cosmetic - No action required
2-A25	Missing door light at header panel	Cosmetic - No action required

Structural

The overall building footprint is 480'-8" x 340'-8". The existing structural framing was observed and original structural drawings, *Central Service Facility and General Office* (6/15/1977), were utilized for confirmation of members.

The roof framing consists of 2" gypsum deck supported by steel joists at 6'-3" typically. The joists span across the typical 41'-6" bays and are supported by steel beams, which are supported by steel columns. The typical bay size is 25' x 41'-6". The joist bearing elevation above the floor varies from 19.75' at the center of the building to 17' at the east and west sides above the slab elevation. The joists are supported by precast bearing walls along the east and west face of the structure. The ridge of the roof structure coincides with the north-south expansion joint with the structure sloping down towards the east and west exterior walls.

The building roof has central longitudinal and transverse expansion joints, creating four structurally independent building zones with distinct lateral load systems. For these zones, perimeter precast walls act as load bearing walls and lateral-load resisting shear walls. Four steel x-braces, located along the east-west expansion joints, brace each of the building zones. The north-south interior column/beam lines likely act as steel moment frames.

For the foundation system, the perimeter walls are supported on grade beams approximately 1'-6" wide x 3'-0" deep. The interior columns are supported by grade beams typically 2'-0" wide x 2'-0" deep. A 6" slab-on-grade extends across the driving surface of the structure.

Site Observation

Based on visual observations, the structure appeared to be in relatively good condition. The roof system did not show signs of distress. Locations noted within the steel structure that should be repaired, but are not required in the five-year scenario, include:

- Steel column bases are rusted at some locations.
- Steel columns have damage, likely from bus impact, at some locations.
- The steel x-braces need cleaning and/or new paint.

The exterior wall panels exhibited minor deterioration but do not show any signs of overall structural distress. Locations noted at the precast walls that should be repaired, but are not required in the five-year scenario, include:

- Repair deterioration at top of parapet.
- Repair deterioration at expansion joint through parapet.

The slab-on-grade had previously been repaired or replaced in some areas. The slab consists of areas not needing immediate repair, locations showing deterioration at the control joints, and locations with more significant cracking/deterioration. The slabs showing significant cracking and deterioration should be repaired or replaced. It is likely that a portion of the slab will need to be repaired/replaced every year due to the contrast movement of buses in this facility.

The foundations could not be observed. However, there was no significant cracking or movement observed for the above-ground structure to indicate foundation distress.

Electrical

Power Distribution

Information about the power distribution system was obtained from site visits and the one-line diagrams in the *Arc Flash Power System Analysis Report* (12/1/2017) as developed by W.L. Cassell and Associates.

The *Arc Flash Report* one-lines indicate that Building 2 has 1200A fuses at the SW2. Field observation shows a 1600 amp, 480V, 3 Phase main switch for SW2. The main switchboard consists of a main section and two 800amp distribution sections with 1600 amp rated neutral amps. The switchboard appears to have Arc Flash Labels dated 11/07/2017, which correlate to the *Arc Flash Power Report*. The switchboard feeds the eight rooftop units and the following panels. Generally, the main switchboard is in good condition; however, there is only one possible space for a future breaker.



Main Switchboard SW2 1600 amp Rated, 1200 amp Fused

Panel H (fed from a 250 amp breaker) is located in the mezzanine. Panel has a 250 amp main breaker and sub-feeds panel N (208V) with 350 amp main breaker through a transformer.

Panel F (fed from a 100 amp switch/fused at 100 amp) located in the same electrical room.

Panel B (fed from a 200 amp switch/fused at 150 amp) located at column line #9 and feeds Panel D through a transformer mounted above the panel.

Panel A (fed from a 200 amp switch/fused at 150 amp) located at column line #27 feeds Panel C through a transformer mounted above the panel.

Panel PP1 is fed from a 400 amp disconnect in the same electrical room. The site visit was not able to confirm how Panel PP1 Disconnect is fed but may be from the switchboard bus.



Panel H (480V) with 250 Amp MCB



Panel B (480V) and Panel D (208V)



Panel A (480V) and Panel C (208V)



Panel PP1 (480V), 15Kva Transformer and Panel CP-1 (208V)

The switchboard has one available space based on observation of the exterior which would need to be confirmed that there is an actual bus behind the cover.

As identified in the *Facilities Audit* (3/31/2017), the panels at column line #9 should be replaced. The panels appear to be corroded and the doors could not be opened. The panels at column line #27 appear to be in better condition although they should be replaced at the same time since they are showing their age. The transformers feeding the 208V panels are covered with diesel exhaust and oils so should be cleaned up and, if corroded, replaced at the same time the panels are updated.

Power Demand

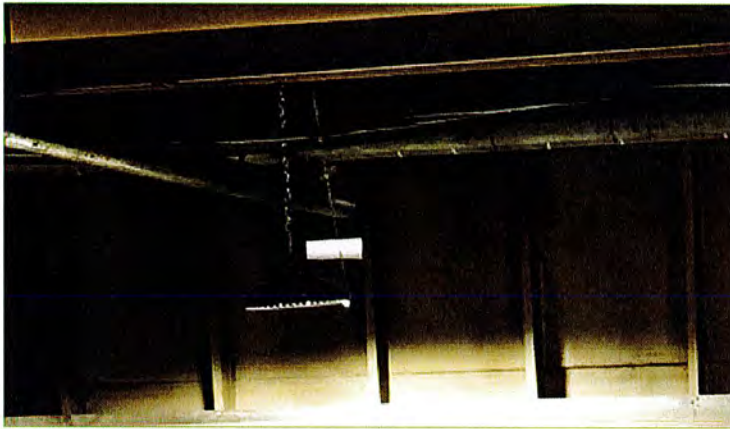
The Kansas City Power & Light (KCP&L) monthly bills for 1350 E. 17th Street are identified below. Based on the KCP&L bills provided for the past year, August appears to be the maximum demand of 741.96 kW or 893.50 amps. Based on the table, above 1.25% of the maximum demand is 1116.88 kW, thus only allowing for 83 amps of spare capacity. This existing maximum demand still needs to be verified to ensure that the bills are not a combination of Building 2 and Building 1. If no additional loads are added, then the existing service can remain. If additional load is added, then the service size will need to be re-evaluated to ensure that the existing demand is not a combination of two buildings.

Month	kW	Demand kW	Amps	Month	kW	Demand kW	Amps
Sep 2019	470.52	436.86	526.08	Feb 2019	877.14	660.51	795.41
Aug 2019 ¹	741.96	741.96	893.50	Jan 2019	877.14	609.84	734.39
Jul 2019	Unknown	Unknown	Unknown	Dec 2019	877.14	544.59	655.82
Jun 2019	877.14	699.3	842.12	Nov 2018	877.14	648.63	781.11
May 2019	877.14	684.54	824.35	Oct 2018	877.14	667.26	803.54
Apr 2019	877.14	574.65	692.02	Sep 2018	Unknown	Unknown	Unknown
Mar 2019	877.14	633.33	762.68	Aug 2018	877.14	740.7	891.98

Lighting

The lighting in the bus storage bays has been upgraded to LED. The fixtures appear to be chain hung and have a safety chain attached. They hang down from the structure.

Egress lighting is achieved with emergency battery operated egress lights. There are a couple of lights that need to be tested to ensure that they are functional and, if so, remounted or replaced. Some of the wire guards appear to be damaged and should be replaced.



View from the Mezzanine (existing LED pendant)



Wire Guard (appears damaged)



Telecom System

There is a main cable tray traveling the length of the Building 2 that appears to have data cabling that feeds wireless access points throughout the building. The conduit entering the building appears to be in good condition although the penetrations into the building do not appear to be sealed and there is evidence of water entering.



Telecom System

Fire Alarm and CNG Detection Systems

The building is equipped throughout with a VESDA VLI system (VLI is an aspiring smoke detector designed to operate in harsh and dirty environments). There are nine VLI detectors with battery backup. Each of the sensors has four pipes and each pipe is equipped with a CNG gas detection ECO sensor to provide full coverage for the building.

Several of the units (#7, #6, and #4) were observed with a fault indicator light on. The balance of the units appeared to be in good condition with no faults. Unit #8 was exposed to bird waste and debris and should be cleaned. It was noted from conversations with staff that the detectors had recently been replaced and all units were functional. Some of the units and piping had diesel gas residue buildup. It is recommended to clean all of the units and pipes to remove the diesel build up.

There are notification devices at each of the man doors and down the walkway in addition to fire alarm pull stations at the man doors.

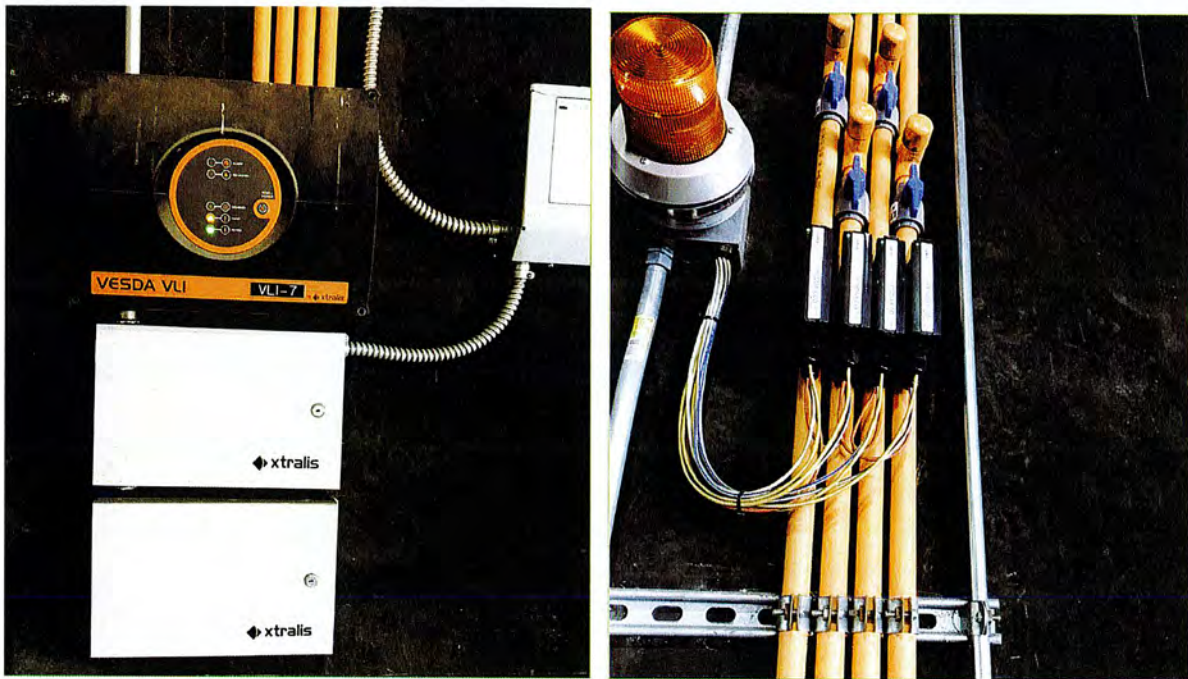
Upon detecting that the level of gas exceeds 25% of the lower flammable limit (LFL) of the CNG, the system notifies the BMS system, which in turn activates the exhaust fans to evacuate the high concentrations of gas.

For maintenance, the VESDA VLI smoke detectors have a life expectancy of approximately ten years. The faults on the system could be caused by air flow issues due to dirty pipes. Maintenance should review data from each detector to determine and address any faults. Pipes can be blown out and/or vacuumed to remove airflow obstructions.

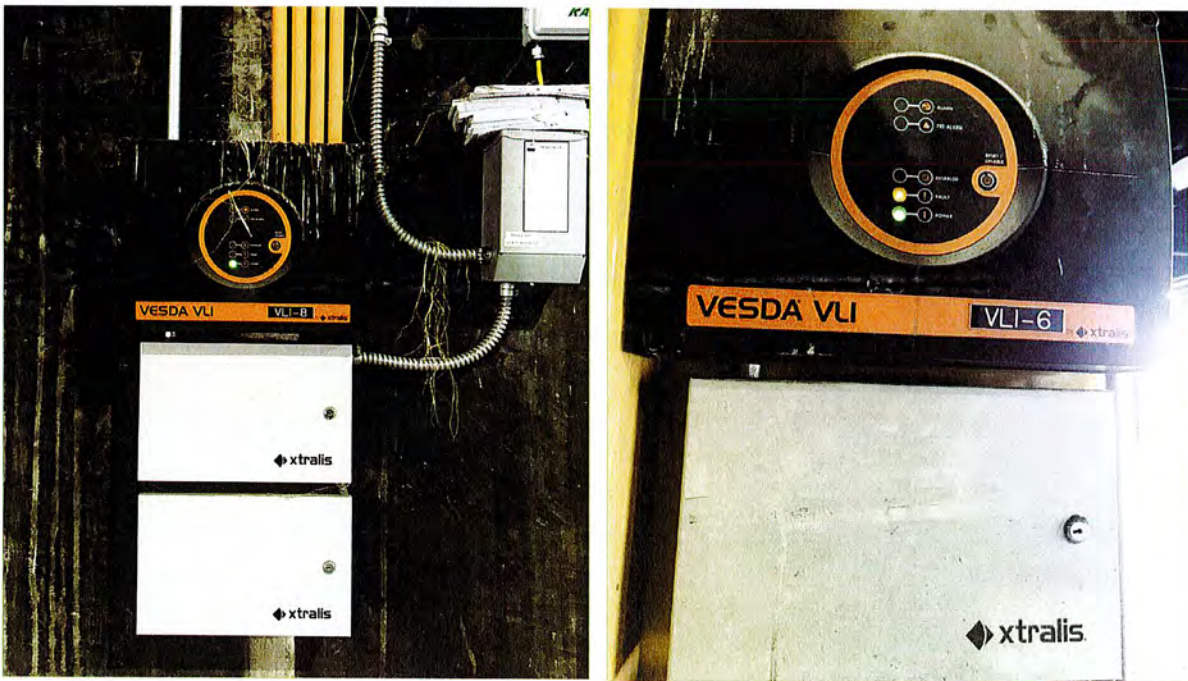
The ECO gas sensors are in line with the pipes. These sensors need ongoing standard preventative maintenance. The gas sensors, over time, lose sensitivity. Therefore, every six months as manufacturer recommended, a Bump Test needs to be performed. The Bump Test consists of inserting gas into the line so that the sensor can be calibrated. This allows the life of the sensor to be extended. The re-calibration can be done until the sensor drift is maxed out and can no longer be calibrated. In addition to the testing, the piping needs to be put on a routine schedule for cleaning. The lines need to be blown out and/or vacuumed.

The sensors were recently replaced. Therefore, maintenance on the system should be able to extend the life of the system for the next five years. If a gas sensor malfunctions, a new ECLO sensor is approximately \$1700 each. These sensors would be replacing the previous ECO sensors which were approximately \$2800 each. If a VLI smoke detector malfunctions, there are component parts that can be replaced such as filters, the laser chamber, or the aspirator. A new network-ready smoke detector is approximately \$8000.

The piping appeared in some locations to be wavy. This may be caused by the use improper brackets. The piping is CPVC and is meant to contract and expand. Therefore, the use of brackets that allow for this movement should be used and the piping should be supported every five feet. This is recommended in areas where the pipe is noticeably wavy to inspect the brackets to ensure conduit brackets were not used since those do not permit the movement and ensure that the piping is supported at 5 foot on centers.



VESDA VLU Unit #7 (detector, battery backup, and flow sensors)



Units #8 and #6 with faults, debris, and diesel fuel buildup

Garage Door Controls

The original construction documents show an overhead door sequence of operation in which doors are to open when the vehicles pass over a vehicle detection loop imbedded in the slab. At time of the site observations, all of the doors were open and it did not appear like they were opening upon activity of vehicles. This functionality will need to be confirmed with staff to determine if still functional.

Mechanical/Plumbing

Rooftop Units

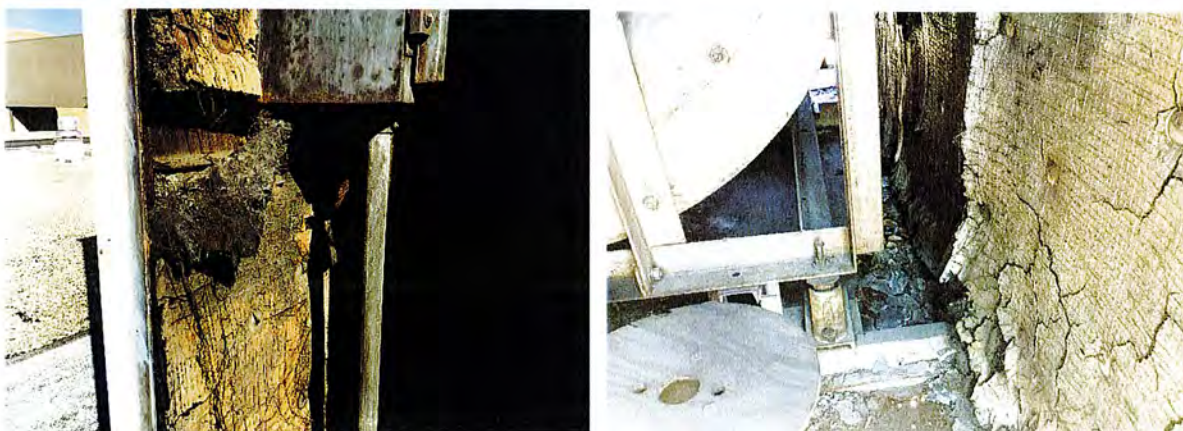
Building 2 is one story, 163,000 square foot building and has 19 overhead garage doors on each of the east and west walls of the building. The building is served by an existing mechanical system consisting of eight rooftop units which are original to the building. Each rooftop unit is equipped with 3,500 MBH steam heating, no cooling, 52,000 cfm 100% outdoor air, and 50,000 cfm exhaust air. Each unit is equipped with an electrical recovery wheel. Each unit has a 50 hp supply fan and a 40 hp exhaust fan. The supply air is distributed to the space through duct mounted diffusers. The return air is conveyed back to the unit for heat recovery with a drop down duct open to the space. The unit is controlled by thermostats mounted in the space.

Site observations included:

- The existing rooftop units are original to the building (installed in 1974) and are past their useful life.
- The unit housing is rusting and the insulation is falling apart and the roof curb is rusted as well. The housing cannot handle any new fittings, welding, or bolts. The poor condition of the housing is the main cause for the units leaking conditioned air to the atmosphere, which is wasting energy. The rooftop unit support structure is weakened and requires major repair and reinforcement along with roof repair.
- The recovery wheel is not in working condition and is deactivated from the unit, which means the conditioned air is exhausted and no energy is captured back for reuse. This defeats the energy saving purpose of the unit.
- Supply ducts exit from the east and west side of the unit and branch south and north to form an H-pattern. It was observed that the ducts and diffusers are covered with diesel fume oils dirt which needs cleaning as required. The supply diffusers towards the door side do not seem to be strategically placed to have air facing the door.
- The rooftop unit return air opening is very wide providing potential for the bus exhaust to run directly into the return air opening. This creates a risk for explosion or fire at the unit even though the building has a CNG detection system.



Rooftop Units



Rooftop Units

Existing Rooftop Units 1-8		
Year Installed		1974
Manufacturer		Energy System Inc.
Model		WRP-50000/TR-45S
Quantity		8
Supply Fan		
	Supply Airflow	52,000 CFM
	Supply/Return Static Pressure (" w.c.)	2.25"/1.5"
	Total S.P. (" w.c.)	2"
	Supply Fan HP/bhp	(1)60 HP/45 bhp
	Supply Fan Speed	
Exhaust Fan		
	Exhaust Airflow	50,000 CFM
	Exhaust Fan HP/bhp	(1)50 HP/38 bhp
	Exhaust Fan Speed	Unknown
Cooling Capacity		
	Total Capacity (Gross)	No
	Sensible Capacity (Gross)	No
Heating Capacity		
	Heating Capacity (input/output)	3,500 MBH/2,275 MBH
	Heating Efficiency	65%
	Turn Down	Unknown
	Recovery Wheel	Deactivated
Electrical		
	Power	460/3
	MCA	97 A
	MOCP	200 A
Weight - Estimated		25,000 lbs.

Rooftop Blast Exhaust Fans

There are sixteen (16) rooftop up blast exhaust fans each with an estimated 7500 cfm exhaust. The fans are controlled by the CNG detection system and CO2 sensors. The existing CO sensors are covered are not properly covered. A manufacturer's recommended dirt cover needs to be provided.

Site observations included:

- The existing exhaust fans are old and still working. There is no energy saving since the unit does not have a Variable Frequency Drive.



Exhaust Fan



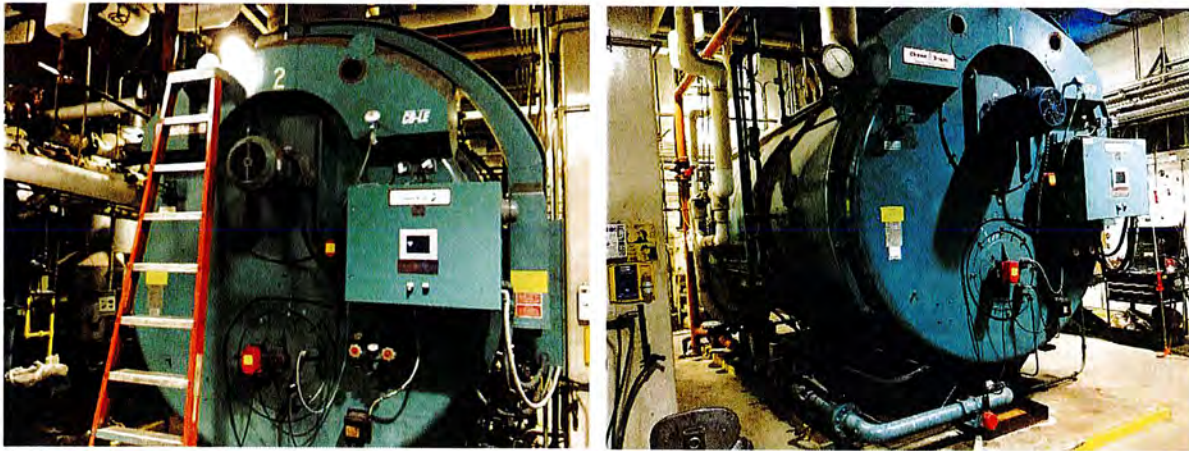
Existing Rooftop Blast Exhaust Fan 1-16		
Year Installed		1999
Manufacturer		Energy System Inc.
Model		Upblast Type
Quantity		16
Exhaust Fan		
	Exhaust Airflow - Estimated	8000 CFM
	Exhaust Fan HP/BHP - Estimated	5 HP/3.75 bhp
	Exhaust Fan Speed	1750 rpm
Electrical		
	Power	460/3
	MCA	9.5 A
	MOCP	15 A
Weight		Unknown

Steam Boilers

The building heating system is served by twin steam heating boilers each with 24,412 MBH located in the Building 1 boiler room. The heating source for the boilers is natural gas. The building heating system is served by twin natural gas, steam heating boilers.

Site observation included:

- The existing boilers were installed in 2008 and are in good working condition. These boilers need daily attention for maintenance or service. This is one of the drawbacks of the boiler steam system compared to gas fired rooftop units normally requiring less maintenance.



Boilers

Existing Steam Boilers		
Year Installed		2008
Manufacturer		Cleaver Brooks
Model		CB-400-500-015
Quantity		2
Heating		
	Input	20,412 MBH
	Output	16738 MBH
	Max. Pressure	15
	Gas (Therm/hr)	204.2
	Efficiency	82%
Electrical		
	Blower Motor	20 HP
	Air Compressor Motor	7.5 HP
	Power	460/3
	MCA	635.A
	MOCP	224 A
Weight		37110 lbs.

Steam Pipes and Condensate Pump

There are two condensate pumps at two locations in the bus storage room. The pumps were installed in 1974, which is original to the building. The pumps need to be replaced. Steam pipes and traps are also original to the building. The pipes are in working condition although leaks have been observed near the condensate pumps. The pipes need to be inspected for leakage and heat loss.



Condensate Pump



Existing Condensate Pump		
Year Installed		1974
Manufacturer		Cleaver Brooks
Model		Unknown
Quantity		2
Pumps & Tank		
	Boiler HP	20,412 MBH
	GPM	60 GPM
	BOILER Motor HP	20 HP
	Dimplex/Duplex	Duplex
	Tank Size	XX GAL
Electrical		
	Power	460/3
	MCA	635.A
	MOCP	224 A
Weight		37110 lbs.

Ductwork and Diffusers

The rooftop units supply 52,000 cfm of air which is distributed with duct trunks routed east and west and branches routed north and south in an H-pattern. The air diffusers are mounted at the duct. The duct appears old and is covered with oil residue.

Site observations included:

- The supply ducts and diffusers need to be replaced to match new demand and layout. The return opening is at the bottom of the unit and is protected with a wide bar grille. Some of the grilles are covered with bird waste.



Ductwork

Storm Drainage System

The roof slopes to the east and west walls and has roof drains for primary drainage and scuppers that provide secondary drainage. The drain pipe is along the interior of the precast wall and connects to the downspout boot at the slab level. It has been noted there is PVC down pipe and broken fittings near the down spout boot at four locations.

Site observations included:

- Some of the storm drain risers are broken near the finished floor. All drains need to be repaired and cleaned on a major maintenance schedule.



Storm Drain



Recommended Solutions for Five-Year Scenario

Rooftop Units

Since the rooftop units are past their useful life, they can fail at any time. Repairing a unit is difficult and costly. Due to the age and condition of the existing units, it is not recommended to perform major repairs due to financial reasons. It is acceptable to use the units until they fail, understanding the following risks and implications if a failure occurs:

- Unplanned emergency replacement of the failed unit will be costly and lengthy. The lead time for components is more than eight weeks because of the unit size and expediting delivery would be costly. The installation would require heavy duty lifting equipment such as a crane which can lift and place the unit 80'-0" from the roof edge in addition to the cost of parts and labor to install.
- It may be possible to heat the space without repairing the unit with temporary heaters/fans that would be placed on the slab level of the building. There is a cost for renting space heaters, if the unit fails during cold temperatures, and the heater locations will likely impact operations of the facility.
- There is a large energy savings if new units are installed that will not be achieved with continued use of the existing units. The potential annual gas consumption savings is approximately \$70,000 and annual electric consumption savings is approximately \$25,500 if all new units were installed.

While keeping the units is not recommended, the following strategies can be implemented to maximize their potential usefulness for the next five years in the order of their importance:

- Preventative Maintenance (perform as soon as possible):
 - Inspect the units and replace broken parts such as fan belts, motor and fan blower bearings, and lubricate.
 - Change filters.
 - Clean all ducts and diffusers to remove oil residue which may cause a fire with CNG buses.
- Replacement parts as they fail:
 - Estimated cost breakdown for each part is outlined below.
- Failure of rooftop unit
 - Failure of one rooftop unit: The delivery of the parts will take between four to eight weeks. In the interim, three 10,000 cfm drum fans should be installed in the space at strategic locations for temporary air circulation in addition to the seven rooftop units set to run at full load. Doors near these fans must stay closed for effectiveness. Each fan may cost approximately \$1,000. This option will only work if one of the units fails.
 - Failure of two rooftop units: If two of the units fail, the remaining units will not be adequate to cover the space because of its size. Four propane space heaters, each with 500 MBH, will need to be rented and placed outside the building with air supplied through the wall with flexible duct. The door near this unit will be out of service.

Description	Qty.	Unit	Unit Cost	Total Cost
Replace motor 50/60 HP	8	EA	\$29,554.01	\$236,432.06
Replace supply fans 60 HP	8	EA	\$62,485.37	\$499,882.94
Replace exhaust fans 50 HP	8	EA	\$80,087.96	\$640,703.71
Replace coils	1	SET	\$524,509.53	\$524,509.53
Replace rooftop unit cabinet and recovery wheel	8	EA	\$278,018.52	\$2,224,148.14
Replace existing rooftop unit steam heating	8	EA	\$260,266.28	\$2,082,130.27
Replace existing rooftop unit with gas fired unit	8	EA	\$296,286.09	\$2,370,288.68

Source: RS means 2016 (Unit price includes (labor + 10% tax + 20%(Overhead + Profit))

Rooftop Blast Exhaust Fans

Since the exhaust fans are in working condition, it is recommended to allow them to run for the next five years until they fail. Unit replacement costs are outlined below.

Description	Qty.	Unit	Unit Cost ¹	Total Cost
Replace rooftop axial exhaust fans, 5 HP, 9,000 cfm, Green heck, model TAUD direct drive axial exhaust model with cast aluminum hub and blades. Typical applications include clean air, fume exhaust, and spark resistant construction. Features include butterfly dampers with a rolled edge for increased strength and gasket covered edges for quiet closure.	16	EA	\$11,605.84	\$185,693.38

¹ Unit cost includes tax and 20% contingency

Source: RS means 2016 (Unit price includes (labor + 10% tax + 20%(Overhead + Profit))

Ductwork and Diffusers

Ducts and diffusers shall be cleaned for better efficiency, deliver clean air, and prevent a cause of fire.

Steam Pipes and Condensate Pump

The steam pipes are original to the units. There are some leaks near the condensate pumps. The steam pipes must be sealed air tight to avoid leakage. Condensate pumps can be replaced as they fail for the next five years.

HVAC System

The HVAC system maintenance should include cleaning and servicing of the rooftop, cleaning ductwork, diffusers, repair and seal steam pipes, and replace condensate pump.

Plumbing System

The plumbing system maintenance should include cleaning the parking floor drain and piping, replace five storm drain down pipes, and connect to the existing down spout boot.

SECTION 3 | FACILITY IMPROVEMENT ANALYSIS

Phase 2 provides summary information for future possibilities for the current Building 2 re-use or new facilities or configurations. As requested by KCATA, the following recommendations include different scenarios and options to support current operations performed in Building 2. Each scenario includes assumptions, recommendations, and conceptual level cost estimates. Scenarios studied include:

- Scenario 1: Demolish Building 2 and replace with new enclosed building
- Scenario 2: Demolish Building 2 and replace with new open air canopy
- Scenario 3: Rehabilitate Building 2 for additional ten-year service life
- Scenario 4: Renovate portion of Building 2 along 18th Street for leasable space
- Scenario 4A: Remove portion of Building 2 along 18th Street and replace with leasable space
- Scenario 5: Rehabilitate Building 2 to address energy efficiency
- Scenario 6: Demolish and replace Building 2 with open air parking

Scenario 1: Demolish Building 2 and replace with new enclosed building

Scenario 1 assumptions include:

- New construction should have a projected 50-year service life.
- Demolition would include all components above grade and below grade as needed for new construction. It is assumed that nothing will be re-used from the existing structure.
- Environmental assessment and remediation would be included.
- Replacement building would be similar type (i.e. of steel frame structure with concrete panel exterior cladding; higher eave line).
- New construction would meet all current codes for energy conservation.
- The building would be the same size and feature the same column arrangement as the existing building (340' x 480' = 163,000 GSF).
- Identical overhead door openings but higher eave to allow sufficient space above doors for air curtains.
- Steel frame structure; open web joists; metal deck; taper rigid insulation; single membrane roof. Roof structure sufficient for future solar electric array.
- Concrete panel exterior cladding.
- 6" reinforced concrete slab with continuous vapor control on crushed stone base.
- Shallow foundations supporting columns and perimeter concrete walls.
- Fast roll up doors with air curtains.
- Mechanical and electrical rooms for incoming services, backflow, panels, and controls.
- North end training and services addition (25' x 150' = 3750 GSF x 2 levels = 7500 SF of habitable space).
- Services addition area to include training classrooms, locker rooms, staff and public access toilets, break room, and bridge link to Building 3.
- Mechanical system to include gas fired rooftop units for heating only for Building 2; and gas fired rooftop units with ducts and variable air volume (VAV) air distribution boxes for offices. Restroom to include VAV boxes and exhaust fans. Estimated heating shall be 150 BTUH per square footage of floor space and cooling for office 1 ton per 300 SF. The roof top units include Variable Frequency Drive (VFD) and control compatible with the BMS system.
- Ventilation system to include roof mounted up-blast exhaust fan system with capacity of 1 cfm per SF. The exhaust fans are controlled by CO2 and CNG detection system.

- Dedicated gas supply to Building 2.
- Dedicated CNG exhaust system.
- Plumbing program to include 3" CW Domestic Water service with backflow prevention, 4" natural gas service with gas pressure regulator, two gas fired water heaters, and compressed air piping. Existing air compressors will be reused.
- Drainage by floor drains to oil-water separators and sub-slab drainage of sanitary and storm water.
- Automatic Fire Protection system to include 8" fire protection service with back flow prevention; wet pipe system for office and dry pipe system for Building 2; Electrical service and lighting upgraded; lighting controls with occupancy sensing.
- Roof area dedicated as "solar-ready" for PV panels, with space allowed for controls and inverters.
- CNG detection/alarm system interconnected with auto exhaust.
- Backup generator on site, dedicated to Building 2 to ensure continuous operations.
- Provide new drive pavement 15' each side of building. This replacement is assumed due to construction activities. The balance of existing pavement is assumed to remain.

Scenario 1A assumptions include:

- Add entry vestibule along west side of building in addition to replacement of existing building (50' x 480' = 24,000 GSF).
- Vestibule of PEMB construction, parallel flange columns aligned to building, fully insulated; single slope shed roof; fast roll up doors at each end.
- MEP program with intake wall louvers for CNG exhaust system; extend CNG detection into addition.

Projected total building cost for Scenario 1 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$1,562,000
B	Building Shell	\$4,748,200
C	Interiors	\$1,125,000
D	Mechanical/Electrical/Plumbing	\$8,440,510
E	Other	\$536,000
	Subtotal	\$16,411,710
	Total ¹	\$28,529,873

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 2: Demolish Building 2 and replace with new open air canopy

Scenario 2 assumptions include:

- New construction should have a projected 50-year service life.
- Demolition of all components above grade and below grade as needed for new construction.
- Perform required environmental assessment and remediation.
- PEMB structure and roof with skylight panels (roof structure sufficient for future solar electric array).
- GSF footprint, column, and bay spacing similar to existing bus storage building.
- New canopy will not include enclosed office space currently provided at north end of building.
- All columns protected by concrete encasement to 5 feet AFF.
- Perimeter guttering with column mounted downspouts; surface flow to trench drains.
- 7" reinforced concrete slab on crush stone base to match footprint of building.
- Shallow foundations supporting columns.
- Electrical services with lighting and engine block heaters.
- Modular pre-fab building (8' x 12') for electrical service entry, panels, and controls.
- Plumbing program to include 3" cold water services with back flow and wall hydrants at one per 200 LF along the perimeter.
- Floor and trench drains connected to sand/oil separators and sub-slab drainage of sanitary and storm water.
- Mechanical system to include for water service entry room and electrical room.
- Automatic Fire Protection system to include 8" fire protection water service, dry pipe system. Provide fire alarm panel for new system.

Projected total building cost for Scenario 2 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$1,558,250
B	Building Shell	\$2,608,000
C	Interiors	\$3,500
D	Mechanical/Electrical/Plumbing	\$3,795,175
E	Other	\$526,000
	Subtotal	\$8,490,925
	Total ¹	\$14,760,498

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 3: Rehabilitate Building 2 for additional ten-year service life

Scenario 3 assumptions include:

- Perform building exterior repairs per Wellner reports.
- Continue roof repairs as needed, including downspout repairs and downspout protection.
- New roof openings, structural reinforcement, and opening infills for replacement rooftop units.
- Continue existing overhead door repair/replacement strategy as currently budgeted.
- Strategic floor slab repairs by replacing damaged areas (assume 8,000 SF of repair).
- Mechanical services to replace heating/ventilation units with 25-year service life.
- Retain CNG detection with continued maintenance program.
- Retain existing exhaust for CNG ventilation.
- Electrical services with new service for replacement rooftop units; replace main panels, breakers, and feeders to RTUs. Add generator power for exhaust fans.
- Maintain the existing lighting. Replace egress fixtures as they fail and budget for fixture replacement and maintenance.
- Plumbing service with downspout repairs.
- Structural steel repairs to columns and baseplates.

Projected total building cost for Scenario 3 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$132,000
B	Building Shell	\$479,300
C	Interiors	\$0
D	Mechanical/Electrical/Plumbing	\$4,105,955
E	Other	\$0
	Subtotal	\$4,717,255
	Total ¹	\$8,200,406

¹Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 4: Renovate portion of Building 2 along 18th Street to create leasable space

Both Scenario 4 and Scenario 4A assumptions include:

- Current M1-5 zoning allows for light industry or commercial use.
- Lease space would have separate MEP services and billing. Assume four zones for metering.
- Assume Building 2 would be renovated for extended minimum 20-year service life, similar to Scenario 5 (i.e. new energy efficient roof, all exterior repairs, and new HVAC).
- Existing rolling gates for access would be relocated north.

Scenario 4 assumptions include:

- Build a fire separation wall at the grid 7 line; providing six 25-foot bays at south (150' x 340' = 51,000 GSF)
- Build new column line at grid 7 to allow physical separation of buildings with unique exterior walls and parapets.
- Repair work to Building 2 including:
 - New end wall/parapet construction integrated with replacement roof.
 - Re-plumb two existing roof drains.
 - Structural roof reinforcement for revised roof configuration and new rooftop unit support.
 - New foundations and slab along new wall.
- Renovation work to Building 2 South including:
 - Replace roof with insulation to current E-code.
 - New masonry wall to enclose north end of building with new foundations. New slab along new wall line.
 - Infill six bay door openings with combinations of overhead doors and entry doors with storefront glazing.
 - Replace south entry door with storefront entry and glazing.
 - Remove one P/C panel per 40-foot bay and replace with storefront entry and glazing.
 - Furr out and insulate at interior of exterior walls for improved thermal performance.
 - Grind and polish existing concrete floor.
 - Mechanical services to include new gas fired roof top units with variable frequency drive (VFD); 150 BTUH per square foot of floor space estimated heating for Building 2.
 - Clean and repair ducts and diffusers for reuse. Demolish steam pipes, valves, and condensate pump back to main.
 - Ventilation exhaust fan system to include roof mounted up-blast exhaust fan 1 cfm per square foot. The exhaust fans are controlled by CO2 and CNG detection system.
 - New electrical service and lighting for warm shell for each tenant. Upgrade switchboard to allow for additional feeders. Replace distribution to accommodate new HVAC system.
 - Add emergency generator for ventilation exhaust fan power.
 - Upgrade fire alarm devices.
 - Update existing CNG gas detection system to accommodate the new tenant spaces.
 - Thoroughly clean and paint interior.
 - Retain current sidewalk, on street parallel parking, and bus stand.
 - Structural roof reinforcement for revised roof configuration.
 - Plumbing system to include 4" natural gas service with gas pressure regulator for the building north building. Add two internal roof drains and plumb to sub-slab.

Projected total building cost for Scenario 4 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$147,550
B	Building Shell	\$1,328,600
C	Interiors	\$290,760
D	Mechanical/Electrical/Plumbing	\$4,300,719
E	Other	\$30,500
	Subtotal	\$6,098,129
	Total ¹	\$10,600,896

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 4A: Remove portion of Building 2 along 18th Street and replace with leasable space

Both Scenario 4 and Scenario 4A assumptions include:

- Current M1-5 zoning allows for light industry or commercial use.
- Lease space would have separate MEP services and billing. Assume four zones for metering.
- Assume Building 2 would be renovated for extended minimum 20-year service life, similar to Scenario 5 (i.e. new energy efficient roof, all exterior repairs, and new HVAC).
- Existing rolling gates for access would be relocated north.

Scenario 4A assumptions include:

- Remove south portion of building at the grid 7 line. Consider salvaging precast concrete end wall panels for reuse on Building 2 south end. Repairs to Building 2 are similar to Scenario 4.
- Repair work to Building 2 including:
 - New end wall/parapet construction integrated with replacement roof.
 - Re-plumb two existing roof drains.
 - Structural roof reinforcement for revised roof configuration and new rooftop unit support.
 - New foundations and slab along new wall.
 - Electrical system upgrade for new feeders and mechanical systems.
 - Add emergency generator for ventilation exhaust fan power.
- New building along 18th Street including:
 - Remove existing floor slab and all structure and sub-slab services.
 - Perform required environmental assessment and remediation.
 - Allow one 25-foot bay width for fire/service lane between buildings with 8" thick concrete pavement.
 - New construction footprint of 125' x 300' = 37,500 GSF to allow for 20-foot clearance to bus drives at each end.
 - 25' x 25' bays with steel frame and bar joists, metal deck with taper rigid insulation, and single membrane roof with internal drains.
 - Masonry exterior walls with parapets; brick veneer on CMU backup; fully isolated and insulated interior framing and gyp board finish; with storefront entry every other bay.
 - Electrical service for new building with separate feeder to each tenant space to be metered separately. Set a 480V/277V panel at each tenant space. Provide warm shell egress illumination with exit and egress lighting.
 - Fire protection system with 4" water service with double check valve, sprinkler control panels, and fire alarm panel.
 - Mechanical/plumbing services for warm shell, with metering for each tenant. Each zone shall include new gas fired rooftop units, ducts and diffusers; rooftop up blast exhaust fan controlled by CO2 and CNG detection system; 2" cold water service with backflow, 3" gas service to include wall hydrants, floor drains, storm drainage systems, sand/oil separator

Projected total building cost for Scenario 4A is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$579,500
B	Building Shell	\$2,506,600
C	Interiors	\$1,715,000
D	Mechanical/Electrical/Plumbing	\$6,432,705
E	Other	\$272,500
	Subtotal	\$11,506,305
	Total ¹	\$20,002,390

¹Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 5: Rehabilitate Building 2 to address energy efficiency

Scenario 5 assumptions include:

- Renovations for projected minimum 20-year service life.
- Roof replacement with insulation to current E-code (R-30 min.) and single membrane.
- Retain/renovate current internal roof drains and overflow scuppers. Replace expansion joints and covers.
- Provide new roof openings, structural reinforcement, and opening infills for replacement rooftop units.
- Remove and replace all sealant joints, expansion joints, and covers.
- Replace all overhead doors with fast roll up, insulated coiling doors.
- Thoroughly clean and paint interior.
- Mechanical systems to include new gas fired roof top units, 150 BTUH per square foot of floor space estimated heating for Building 2. The roof top units include variable frequency drive (VFD). Clean and repair ducts and diffusers for reuse. Demolish steam pipes, valves, and condensate pump back to main.
- Provide new roof exhausts for CNG detection. Add louvers along perimeter of vestibule.
- Add lighting controls and occupancy sensors.
- Retain existing CNG gas detection system and interconnect with wall louvers and new roof exhausts.
- Plumbing program to include routing gas line with separate meter, replace five storm down pipes with new and connect to down spout boot, and clean parking floor drain and piping.
- Add storm drainage system and floor drain in the vestibule area.
- Extend automatic fire protection system to include vestibule.
- Add entry vestibule along west side of building (50' x 480' = 24,000 GSF; approx. \$800,000).
- Vestibule of PEMB construction, parallel flange columns aligned to building, fully insulated; single slope shed roof; fast roll up doors at each end. Provide new 6" concrete slab within footprint of new vestibule.
- Structural steel repairs to columns and baseplate.
- Strategic floor slab repairs by replacing damaged areas (assume 8,000 SF of repair).

Projected total building cost for Scenario 5 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$226,000
B	Building Shell	\$1,988,400
C	Interiors	\$0
D	Mechanical/Electrical/Plumbing	\$6,066,643
E	Other	\$0
	Subtotal	\$8,281,043
	Total ¹	\$14,395,642

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

Scenario 6: Demolish and replace Building 2 with open air parking

Scenario 6 assumptions include:

- Demolition of all components above grade and below grade as needed for new construction.
- Perform required environmental assessment and remediation.
- Design and install stormwater detention and conveyance system to connect to City sewer.
- Construct 7" reinforced concrete slab on compacted crushed stone base.
- Provide engine block heaters on stands with bollard protection.
- Mechanical systems to include site lighting meeting cut off and dark sky requirements.
- Electrical systems to include weather protected electrical service entry, panels, and controls.
- Provide perimeter fencing and automatic rolling gates.
- Provide security cameras at perimeter.
- Civil system to include storm drainage by floor and trench drains connected to sand/oil separators and sub-slab drainage of sanitary and storm water.

Projected total building cost for Scenario 6 is summarized below with a cost estimate attached.

Category		Total Cost
A	Building Substructure	\$1,498,000
B	Building Shell	\$50,000
C	Interiors	\$0
D	Mechanical/Electrical/Plumbing	\$2,192,400
E	Other	\$578,500
	Subtotal	\$4,318,900
	Total ¹	\$7,507,912

¹ Total cost includes contractor costs, contingency, inflation, and design fees.

Summary of Scenarios

The scenarios requested by KCATA have been analyzed for relative costs and design assumptions. As noted, not all scenarios provide the same square footage of the existing Building 2. KCATA will need to determine how to replace the existing footprint that would be lost for those scenarios. The scenarios do not have the same time horizons for the stated costs. The solutions vary from a five-year life expectancy (Phase 1 basic maintenance) to a 50-year life expectancy (new building construction in Scenarios 2 and 3) with 10-20 year life expectancy for the renovation scenarios.

The scenarios also do not address any operational concerns with modifying the existing building (i.e. adding a vestibule on the west) or demolition. As KCATA further develops their needs and budget, those issues can be discussed more in-depth for specific solutions. The analysis provides discussion points and costs for the various scenarios that can be used by KCATA for budgeting and planning.

[illegible]

KCATA BUILDING 2 ASSESMENT: SCENARIO 1 - DEMOLISH BUILDING 2 AND REPLACE WITH NEW ENCLOSED BUILDING						
	ITEM	ITEM DESCRIPTION & NOTES	UNITS	QUANTITY	UNIT COST	TOTAL
A. SUBSTRUCTURE						
	Standard Foundations		CY	800	\$ 400.00	\$ 320,000
	Concrete Slab-on-Grade		SF	168,000	\$ 6.75	\$ 1,134,000
	Below grade utilities / piping	See Plumbing	SF			\$ -
	Pavement		SF	14400	7.5	\$ 108,000
B. SHELL						
	B10 SUPERSTRUCTURE					\$ 4,748,200
	Roof Construction		SF	168000	\$ 18.00	\$ 3,024,000
	B20 Exterior Enclosure					
	Exterior Walls - Concrete tilt up panels		SF	25000	\$ 20.00	\$ 500,000
	Exterior Doors - Person access		Each	10	\$ 1,100.00	\$ 11,000
	Overhead Doors - coiling, insulated w operators		Each	36	\$ 12,000.00	\$ 432,000
	B30 ROOFING					
	Roof Membrane	100 SF = 1 Square	SQ	1,680	\$ 215.00	\$ 361,200
	Roof Insulation		SF	168,000	\$ 2.50	\$ 420,000
C. INTERIORS						
	Occupied space with HVAC		SF	7500	\$ 150.00	\$ 1,125,000
			SF			\$ -
D. MEP						
	D21 Fire protection					\$ 8,440,510
	New Service		EA	1	\$ 20,000.00	\$ 20,000
	NFPA 13 Sprinkler System		SF	168000	\$ 3.00	\$ 504,000
	Fire Sprinkler Compressor - Exist		EA	4	\$ 2,500.00	\$ 10,000
	D22 PLUMBING					
	Water Main Service Line		EA	1	\$ 8,450.00	\$ 8,450
	Gas Piping		LF	2000	\$ 75.00	\$ 150,000
	Water Heater		EA	2	\$ 31,000.00	\$ 62,000
	Sand Oil Separator		EA	2	\$ 46,500.00	\$ 93,000
	Plumbing Work		EA	168000	\$ 3.25	\$ 546,000
	Plumbing fixtures for RR		EA	4	\$ 11,100.00	\$ 44,400
	D23 MECHANICAL					
	Rooftop Units - Heating Only		MBH	25200	\$ 75.00	\$ 1,890,000
	Rooftop units with cooling & Heating		TON	20	\$ 3,500.00	\$ 70,000
	Duct Work		LBs	31200	\$ 10.25	\$ 319,800
	Insulation		SF	41600	\$ 5.00	\$ 208,000
	Air Curtains		EA	68	\$ 6,000.00	\$ 408,000
	Louvers		SF	1600	\$ 87.50	\$ 140,000
	Exhaust Systems		EA	20	\$ 6,125.00	\$ 122,500
	Demo Condensate pumps		EA	2	\$ 1,900.00	\$ 3,800
	Demo Steam Heating Pipe		LF	3520	\$ 18.50	\$ 65,120
	Controls Equipment		EA	1	\$ 25,000.00	\$ 25,000
	Controls 1000/pt		EA	105	\$ 1,000.00	\$ 105,000
	Compressed Air		LF	5600	\$ 10.75	\$ 60,200
	Commissioning		SF	168000	\$ 1.00	\$ 168,000
	D28 FIRE PROTECTION & SPECIAL SENSOR/ALARM SYSTEMS					
	CO Detection / Alarm		SF	30	\$1,908.00	\$ 57,240
	CNG Detection / Alarm		SF			\$ -
	D50 ELECTRICAL					
	Electrical Service/ Distribution	2000 Amp Service and distribution	SF	168000	\$5.70	\$ 957,600
	Lighting & Branch Wiring	LED Lighting, Lighting Controls	SF	168000	\$7.00	\$ 1,176,000
	Communication & Security	Telecom/Card Access, Cameras at mandooors	SF	168000	\$2.50	\$ 420,000
	Fire Alarm and CNG Detection/Alarm	Addressable Fire alarm System, VESDA gas detection	SF	168000	\$4.00	\$ 672,000
	Lightning Protection		SF	168000	\$0.80	\$ 134,400
E. OTHER						
	Demolition		SF	168000	\$2.00	\$ 336,000
	Environmental Assessment & Remediation		Allowance	1	\$200,000.00	\$ 200,000
			SF			\$ -
			SF			\$ -
			SF			\$ -
SUBTOTAL						
					\$	16,411,710
	Contractor's General Requirements	10%		10.0%	\$	1,641,171
	Contractor's Overhead	5%		5.0%	\$	820,586
				SUBTOTAL	\$	18,873,467
	Contractor's Profit	10%		10.0%	\$	1,887,347
				SUBTOTAL	\$	20,760,813
	Estimating Contingency @	20.0%		20.0%	\$	4,152,163
	Estimate Date	2019		SUBTOTAL	\$	24,912,976
	Escalation Cost to Mid-Pt. of Const. Yr. @	2.50% per year	Mid-pt. year =	2021	105.1%	\$ 26,174,195
	Design Fees @	9%			\$	2,355,678
	PROJECTED TOTAL BUILDING COST				\$	28,529,873

Notes: 1. Option 1A includes a new PEMB vestibule on the west side of the existing building. The additional cost of this vestibule is approximately \$2,000,000.

Notes: 1. This option does not replace the enclosed spaces that currently reside in Building 2. KCATA would need to build or find space for approximately 7500 sf to replace.

Notes: 1. This option does not replace the enclosed spaces that currently reside in Building 2. KCATA would need to build or find space for approximately 7500 sf to replace.

KCATA BUILDING 2 ASSESMENT: SCENARIO 3 - REHABILITATE BUILDING 2 FOR ADDITIONAL 10 YEAR SERVICE LIFE						
	ITEM	ITEM DESCRIPTION & NOTES	UNITS	QUANTITY	UNIT COST	TOTAL
A. SUBSTRUCTURE						
	Concrete Slab-on-Grade Repairs		SF	8,000	\$ 8.00	\$ 64,000
	Below grade utilities / piping		SF			\$ -
	Pavement Repairs		SF	8000	\$ 8.50	\$ 68,000
						\$ -
B. SHELL						
						\$ 479,300
	B10 SUPERSTRUCTURE					
	Clean and Paint Steel Column Base Plates		Each	165	\$ 500.00	\$ 82,500
	Repair Steel Columns		Each	10	\$ 1,000.00	\$ 10,000
	B20 Exterior Enclosure					
	Perform repairs recommended by previous reports: Cleaning, painting, expansion joint repairs; joint sealant					\$ 82,000
	Overhead doors, repair/replace per previous reports					\$ 227,000
						\$ -
	B30 ROOFING					
	Downspout and drain repairs and protection (per PH 1.)					\$ 27,800
	Roof repair allowance:		Annual	10	\$ 5,000.00	\$ 50,000
C. INTERIORS						
			SF			\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
D. MEP						
						\$ 4,105,955
	D21 Fire protection					
	D22 PLUMBING					
	Gas Piping		LF	2000	\$ 75.00	\$ 150,000
	Replace / Repair 5 Drains		EA	5	\$ 2,000.00	\$ 10,000
	Inspection and Camera		EA	1	\$ 875.00	\$ 875
	Cleaning Drains		LF	1920	\$ 4.25	\$ 8,160
	D23 MECHANICAL					
	Gas fired Rooftop Units - Heating Only		MBH	25200	\$ 75.00	\$ 1,890,000
	Duct Work - Cleaning		LF	2800	\$ 45.00	\$ 126,000
	Demo Condensate pumps		EA	2	\$ 1,900.00	\$ 3,800
	Demo Steam Heating Pipe		LF	3520	\$ 18.50	\$ 65,120
	Control Terminal Connection		EA	16	\$ 1,000.00	\$ 16,000
	Controls 1000/pt		EA	16	\$ 2,000.00	\$ 32,000
	Commissioning		SF	8	\$ 5,000.00	\$ 40,000
	D26 ELECTRICAL					
	Electrical Service/ Distribution	New Panels, New Xfr switch and Generator power for Exhaust	SF	168000	\$ 5.00	\$ 840,000
	Lighting & Branch Wiring	Replacement egress lighting as they fail, maintenance	SF	168000	\$ 2.00	\$ 336,000
	Communication & Security	Maintain, allow budget for maintenance or replacement of items	SF	168000	\$ 0.50	\$ 84,000
	D28 FIRE PROTECTION					
	Fire Alarm/CNG Detection System	Maintain, perform Bump Tests, Replace failing devices	SF	168000	\$ 3.00	\$ 504,000
						\$ -
E. OTHER						
			SF			\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
SUBTOTAL						\$ 4,717,255
Contractor's General Requirements				10.0%		\$ 471,726
Contractor's Overhead				5.0%		\$ 235,863
SUBTOTAL						\$ 5,424,843
Contractor's Profit				10.0%		\$ 542,484
SUBTOTAL						\$ 5,967,328
Estimating Contingency @				20.0%		\$ 1,193,466
Estimate Date				2019		
SUBTOTAL						\$ 7,160,793
Escalation Cost to Mid-Pt. of Const. Yr. @				2.50% per year	Mid-pt. year = 2021	\$ 7,523,308
Design Fees @				9%		\$ 677,098
PROJECTED TOTAL BUILDING COST						\$ 8,200,406

Notes: i. This option eliminates about 60,000 sf of usable space from building 2 square footage. We assume that this space is required and will be built. The approximate cost of a new 60,000 sf pre-engineered metal open canopy is \$5,500,000 and a new 60,000 sf steel framed and enclosed building is \$10,000,000.

Notes: i. This option eliminates about 60,000 sf of usable space from building 2 square footage. We assume that this space is required and will be built. The approximate cost of a new 60,000 sf pre-engineered metal open canopy is \$5,500,000 and a new 60,000 sf steel framed and enclosed building is \$10,000,000.

Notes: This option eliminates about 60,000 sf of usable space from Building 2 square footage. We assume that this space is required and will be built. The approximate cost of a new 60,000 sf pre-engineered metal open canopy is \$5,300,000 and a new 60,000 sf steel framed and enclosed building is \$10,000,000.

Notes: This option eliminates about 60,000 sf of usable space from Building 2 square footage. We assume that this space is required and will be built. The approximate cost of a new 60,000 sf pre-engineered metal open canopy is \$5,300,000 and a new 60,000 sf steel framed and enclosed building is \$10,000,000.

KCAT A BUILDING 2 ASSESMENT: SCENARIO 6 - DEMOLISH BUILDING 2 AND REPLACE WITH OPEN AIR PARKING						
	ITEM	ITEM DESCRIPTION & NOTES	UNITS	QUANTITY	UNIT COST	TOTAL
A. SUBSTRUCTURE						\$ 1,498,000
	Standard Foundations		CY	-	\$ -	\$ -
	Concrete Slab-on-Grade, coatings and striping		SF	168,000	\$ 7.50	\$ 1,260,000
	Inlets, collection & conveyance piping		Allowance			\$ 50,000
	Detention structures		Allowance			\$ 80,000
	Pavement, drives and repairs		SF	14400	\$ 7.50	\$ 108,000
			CY			\$ -
B. SHELL						\$ 50,000
	B10 SUPERSTRUCTURE					
	EBH mounting Bollards, 2 EBH per mount		SF	0	\$ -	\$ -
			EA	125	\$ 400.00	\$ 50,000
	B20 Exterior Enclosure					
			SF			\$ -
						\$ -
						\$ -
	B30 ROOFING					
			SF			\$ -
			LS			\$ -
C. INTERIORS						\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
						\$ -
			SF			\$ -
			SF			\$ -
			SF			\$ -
D. MEP						\$ 2,192,400
	D20 PLUMBING					
	D30 MECHANICAL					
	D26 ELECTRICAL					
	Electrical Service/ Distribution	Assumed 250 engine block heaters	SF	168000	\$ 6.45	\$ 1,083,600
	Lighting & Branch Wiring		SF	168000	\$ 6.00	\$ 1,008,000
	Communication & Security		SF	168000	\$ 0.60	\$ 100,800
	D28 FIRE PROTECTION & SPECIAL SENSOR/ALARM SYSTEMS					
E. OTHER						\$ 578,500
	Demolition		SF	168000	\$ 2.00	\$ 336,000
	Environmental Assessment & Remediation		Allowance	1	200,000	\$ 200,000
	Perimeter fencing infill		LF	500	\$ 45.00	\$ 22,500
	Stormwater Engineering & Permitting		Allowance			\$ 20,000
SUBTOTAL						\$ 4,318,900
	Contractor's General Requirements	10%		10.0%		\$ 431,890
	Contractor's Overhead	5%		5.0%		\$ 215,945
				SUBTOTAL		\$ 4,966,735
	Contractor's Profit	10%		10.0%		\$ 496,674
				SUBTOTAL		\$ 5,463,409
	Estimating Contingency @	20.0%		20.0%		\$ 1,092,682
	Estimate Date	2019		SUBTOTAL		\$ 6,556,090
	Escalation Cost to Mid-Pt. of Const. Yr. @		2.50% per year	Mid-pt. year =	2021	105.1%
						\$ 6,887,992
	Design Fees @	9%				\$ 619,919
	PROJECTED TOTAL BUILDING COST					\$ 7,507,912