College for all Texans

Texas Higher Education Coordinating Board

Report and Recommendations of the Workgroup on Campus Condition Index

FY 2010

DRAFT

July 2010

Division of Planning and Accountability
Finance and Resource Planning

Texas Higher Education Coordinating Board

Fred W. Heldenfels IV, CHAIR	Austin
Elaine Mendoza, VICE CHAIR	San Antonio
Vacant, SECRETARY OF THE BOARD	
Erick Rohne, STUDENT REPRESENTATIVE	Houston
Durga D. Agrawal	Houston
Dennis D. Golden	Carthage
Wallace Hall, Jr.	Dallas
Joe B. Hinton	Crawford
Brenda Pejovich	Dallas
Lyn Bracewell Phillips	Bastrop
A.W. "Whit" Riter III	Tyler

Raymund A. Paredes, COMMISSIONER OF HIGHER EDUCATION

Mission of the Coordinating Board

The Texas Higher Education Coordinating Board's mission is to work with the Legislature, Governor, governing boards, higher education institutions and other entities to help Texas meet the goals of the state's higher education plan, *Closing the Gaps by 2015*, and thereby provide the people of Texas the widest access to higher education of the highest quality in the most efficient manner.

Philosophy of the Coordinating Board

The Texas Higher Education Coordinating Board will promote access to quality higher education across the state with the conviction that access without quality is mediocrity and that quality without access is unacceptable. The Board will be open, ethical, responsive, and committed to public service. The Board will approach its work with a sense of purpose and responsibility to the people of Texas and is committed to the best use of public monies. The Coordinating Board will engage in actions that add value to Texas and to higher education. The agency will avoid efforts that do not add value or that are duplicated by other entities.

The Texas Higher Education Coordinating Board does not discriminate on the basis of race, color, national origin, gender, religion, age, or disability in employment or the provision of services.

DRAFT

Table of Contents

Charges to the Workgroup 2
Workgroup Roster 3
Executive Summary 4
Objective 6
Scope 6
Authority 6
Background 7
Campus Condition Index Value Recommendations 8
- CHARGE 1 8
- CHARGE 2 10
- CHARGE 3 10
- CHARGE 4 11
- CHARGE 5 11

Deferred Maintenance 15
- CHARGE 1 15
- CHARGE 2 16
- CHARGE 3 16
- CHARGE 4 19
- CHARGE 5 20

Glossary of Terms 21
Appendix A: Campus Condition Index Value Calculation Examples 24
Appendix B: Deferred Maintenance Reporting Examples 29
Bibliography 34

Table of Figures

Figure 1: Percent Change 9
Figure 2: Project Efficiencies 9
Figure 3: CPI-U vs RS Means 12
Figure 4: UT System Cost Escalation 13
Figure 5: Maintenance Flow Chart 15
Figure 6: Institution Maintenance Report 18
Figure 7: Methodology Comparison 19

DRAFT

Charges to the Workgroup

Replacement Value:

Charge 1: Comment on the validity of replacing the multiplier with 1.67 (or 60 percent efficiency).

Charge 2: Comment on the validity of calculating an Institution-Wide Replacement Value to be used as a measure of accumulated deferred maintenance.

Charge 3: Comment on the validity of removing the Room Adjustment Coefficients (RAC) from the calculation.

Charge 4: Comment on the validity of removing the Location Adjustment Coefficients (LAC) from the calculation.

Charge 5: Comment on the validity of using CPI-U versus RS Means Historical Data for calculating the Time Adjustment Factor (Inflation Factor).

Deferred Maintenance:

Charge 1: Assess the definitions currently used by the THECB and provide recommendations for modification.

Charge 2: Consider the use of an ordinal measure (e.g. facilities condition index) as opposed to a nominal measure (i.e. the currently used 5% cap) and provide recommendations for implementation.

Charge 3: Identify the disincentives to accurate and complete reporting of deferred maintenance. Provide recommendations that meet the statutory requirements in place for the THECB, minimize the real and perceived disincentives to accurate reporting, and that meet the needs of the institution; using existing reporting data if possible.

Charge 4: Consider the integration of energy conservation into the reporting of deferred maintenance.

Charge 5: Discuss and provide recommendations for a target amount of an institutional operating budget that should be spent on the various aspects of deferred maintenance/capital renewal.

The Coordinating Board staff would like to express our sincere gratitude to the open and meaningful comments offered by the workgroup members. The majority of the workgroup dedicated more than 20 hours of their time in meetings and untold hours outside of meetings shaping the recommendations included in this report. We extend a special note of appreciation to the leadership displayed by Russell Wallace of Texas A&M System and Lee Britain of Stephen F. Austin State University in chairing their respective workgroups.

DRAFT

Workgroup Roster

System	Name	Email	Phone
Texas A&M University	Russell Wallace (RV Chair) Director of Project Delivery Texas A&M University System	RWallace@tamu.edu	(979) 458-7002
University of North Texas	Mr. Charles Jackson Executive Director of Facilities University of North Texas	Charles.Jackson@unt.edu	(940) 565-3990
University of Houston	Melissa Bellini Executive Director, Facilities Maintenance University of Houston	MBellini@Central.UH.EDU	(713) 743-8750
Texas Southern University	Tim Rychlec Executive Director of Facilities and Maintenance Texas Southern University	Rychlect@tsu.edu	(713) 313-1810
Texas Woman's University	Bill Beckham Assistant Director Resource Planning & Assets Texas Woman's University	WBeckham@twu.edu	(940) 898-3134
Midwestern State University	Kyle Owen Associate Director, Physical Plant Midwestern State University	Kyle.Owen@mwsu.edu	(940) 397-4648
Texas State University	Juan Guerra Physical Plant, Administration Texas State University - San Marcos	JuanGuerra@txstate.edu	(512) 245-2820
The University of Texas	Charlie Brady Executive Director Of Facilities Design & Construction Services The University of Texas System	CBrady@utsystem.edu	(512) 499-4329
Texas Tech University	Jim Brunjes Senior Vice Chancellor Texas Tech University System	Jim.Brunjes@ttu.edu	(806) 742-9000
Texas State Technical Colleges	Paul Woodfin Associate Vice Chancellor for Administrative Services Texas State Technical College System	Paul.Woodfin@tstc.edu	(254) 867-4802
Stephen F. Austin State University	Lee Brittain (DM Chair) Director, Physical Plant Stephen F. Austin State University	LBrittain@sfasu.edu	(936) 468-1400

DRAFT

Executive Summary

The staff recommends reengineering the deferred maintenance standard by implementing a Campus Condition Index (CCI).

- Evaluate deferred maintenance with an ordinal measure (Good, Fair, and Poor).
- Collect maintenance data at the building level.
- Report deferred and planned maintenance for current year and next four years.
- Report funded and unfunded maintenance.
- Revise maintenance definitions to reduce the scope of deferred maintenance and account for all but on-going maintenance.
    - Critical Deferred Maintenance – Any deferred maintenance that if not corrected in the current budget cycle places its building occupants at risk of harm or the facility at risk of not fulfilling its functions.
    - Deferred Maintenance – The accumulation of facility components in need of repair or replacement brought about by age, use, or damage for which remedies are postponed or considered backlogged that is necessary to maintain and extend the life of a facility. This includes repairs postponed due to funding limitations. Deferred maintenance excludes on-going maintenance, planned maintenance performed according to schedule, and facility adaptation items.
    - Facility Adaptation – Includes facility improvements and changes to a facility in response to evolving needs. The changes may occur because of new programs or to correct functional obsolescence. This category is sometimes referred to as Capital Renewal.
    - Planned Maintenance – A systematic approach to repairing or replacing major building subsystems including, but not limited to roofs, HVAC, electrical and plumbing systems, which have predictable life-cycles, to maintain and extend the life of the facility. This category is sometimes referred to as Facility Renewal or Capital Repair. Planned maintenance is normally funded by an institution's capital budget.
    - On-going Maintenance – Routine upkeep to include, but not limited to, the lubrication of moving parts, checking electrical systems, and patching of roofs. Failure to attend to these tasks may result in accelerated deterioration of facilities and increases the likelihood of extensive emergency repairs. On-going maintenance is normally funded by an institution's operating budget.
- Implement an Institution-Wide Campus Condition Index Value (IWCCIV) and simplify the current educational and general Campus Condition Index (CCI) Value calculation.
- Replace the current variable building with a constant of 1.67.

DRAFT

- Remove the Room Adjustment Coefficient (RAC).
- Remove the Location Adjustment Coefficient (LAC).
- Use CPI-U (instead of RS Means) to adjust project costs for inflation.
- Use separate base rates for General Academic Institutions (GAI) and Health-Related Institutions (HRI).
- Exclude projects submitted with the "Other" facility type from the GAI base rate.
- Include an infrastructure allowance of 25 percent in institution-wide value calculation.
    - E&G CCI Value: Sum of (E&G NASF $_{Building}$ * Base Rate $_{sector}$ * Multiplier $_{GSF}$)
    - Institution-Wide CCI Value: Sum of (GSF $_{Building}$ * Base Rate $_{sector}$ * Multiplier $_{Infrastructure}$)
    - The staff analyzed the past five-year's data to conclude the simplified equation materially replicates the more complex version in use.

DRAFT

Objective

The Campus Condition Index (CCI) provides a measure to inform policymakers as to the condition of facilities. The index is used as an evaluation standard on capital project requests, and the CCI value is used in determining the "condition" element of the Higher Education Assistance Fund (HEAF) allocation model[1].

Scope

The index compares the deferred maintenance of a given building to the building's calculated value. The CCI index scope includes Texas public general academic institutions, health-related institutions, and technical colleges' facilities. Excluded are the facilities of Texas public community colleges and independent institutions of higher education, as the State does not fund for these facilities.

Authority

Texas Education Code (TEC) 61.0572 (b)(4)

> CONSTRUCTION FUNDS AND DEVELOPMENT OF PHYSICAL PLANTS: …The board shall…require, and assist the public technical institutes, public senior colleges and universities, medical and dental units, and other agencies of higher education in developing long-range campus master plans for campus development…

Texas Education Code, 61.0582

> CAMPUS MASTER PLAN; DEFERRED MAINTENANCE – Requires institutions to report deferred maintenance to the board, allows the Board to set rules defining required data elements, and requires the Board to report the facilities' condition to the State.

Texas Administrative Code (TAC), Section 17.100 (3)

> Deferred Maintenance and Replacement Value – requires the Board to calculate a facilities value for comparison to reported deferred maintenance. Establishes the ratio to be used for announcing the facilities' condition and project evaluation.

TAC, Section 17.101 (2)(B)

> Campus Deferred Maintenance Plan (MP2) – sets the data elements and parameters of the deferred maintenance plans reported.

TAC, Section 17.101 (2)(C)

> Campus Addressed Deferred Maintenance Report (MP4) – sets the data elements and parameters of deferred maintenance expenditures reported.

[1] The Higher Education Assistance Fund allocation model consists of three elements: Need, Condition, and Complexity. The institution's space projection model deficit is used to allocate the portion of the fund dedicated to the need element based of the portion of an institution's deficit compared to the sum of all HEAF eligible institutions. An institution's Campus Condition Index Value (historically calculated using the replacement value) is used to allocate the condition element funding providing the institution's portion of the total CCIV of all HEAF eligible institutions. The complexity element is allocated by the institution's portion of the total HEAF eligible institutions' formula funding.

DRAFT

Background

Texas is no exception to the significant issues higher education faces in regards to managing Deferred Maintenance. The campus growth spike of the last five decades amplifies the situation as facilities' average age exceeds 30 years and maintenance requirements place more demands on limited resources. The data quantity and usability of the annual Institution Deferred Maintenance Report questionable. However, the more apparent issue in recent years has been the gap between the data needed and received to make informed facilities management decisions.

1992 – Advisory Committee on Deferred Maintenance: Charged with defining the causes of deferred maintenance and advising on actions to reduce the backlog and postpone the need for maintenance and rehabilitation. The committee cited the primary causes of age and underfunding, and the secondary causes as state and federal legislation mandates, poor construction and design, reprioritization of funds, building use changes, and weather and soil conditions. The committee recommended revising definitions, requiring all Capital Project Requests address deferred maintenance, and implementing a Facilities Condition Index (Kaiser , 1993) .

1999 – Texas Performance Review ED 13: Called for the Board to monitor progress in clearing deferred maintenance by tracking Facility Condition Indices and baselines and to conduct facility audits (financed by institutions' appropriations). The Board maintains a database of Institution Deferred Maintenance Report data, but it is insufficient to calculate a Facility Condition Index (Texas Comptroller of Public Accounts , 1999) .

2000 – Campus Building Condition Advisory Committee: Charged with studying building conditions and defining a process, implementable with existing resources, to provide building condition data of sufficient quality to allocate HEAF funds; defining deferred maintenance and building condition more precisely; and developing a facilities replacement value methodology. The committee recommended institutions conduct peer review facility assessments, eliminate the deferred maintenance standard for capital project requests, implement a complex replacement value formula (modified version in use today), and separate the deferred maintenance definition (budgeted and scheduled, critical, and unbudgeted).

2004 – Working Group on Deferred Maintenance/Replacement Values: Reviewed deferred maintenance and replacement cost issues and recommended increasing deferred maintenance report accuracy with peer or contracted audits. The group was to review and validate the current process for calculating deferred maintenance, recommend adjustments, and validate or recommend adjustments to the current methodology for determining replacement value. The Board partially implemented the group's recommendations.

DRAFT

Campus Condition Index Value Recommendations

Charge 1
Comment on the validity of replacing the multiplier with 1.67 (or 60 percent efficiency).

Staff: Recommends implementing the use of a constant 1.67 building gross square foot multiplier to replace the variable multiplier calculation.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted.

Justification: While the variable building multiplier methodology would logically result in a more precise Campus Condition Index Value than a constant value, the calculation is skewed as non-E&G rooms are optionally reported to the Board.

The current methodology calculates the multiplier as the ratio of reported building gross square feet and the sum of the net assignable square feet (NASF) of all the rooms reported for the building. With non-E&G rooms excluded, the denominator of the ratios is smaller than real. In mixed use buildings the denominator can be dramatically small, which results in dramatically higher than real multipliers. The value has been calculated with multipliers as high as 1060 during the last five years. If the ideal building efficiency is 60 percent, which would result in a multiplier of 1.67, then this maximum was more than 600 times greater than ideal and would have suggested the building had an efficiency of 9 hundredths of a percentage point.

The majority of buildings on Texas public university campuses are mixed use; however, the distribution of the current multiplier is well below the recommended multiplier at 1.44 or 70 percent efficient. Using the past five years of data, the staff has calculated the effects of all the recommended changes, however the effects of using a static multiplier overshadow the other recommended changes (Figure 1: Percent Change).

A constant multiplier of 1.67 was determined valid and reasonable as the two facility types included in calculating the base rate have a recommended Board standard efficiency of 60 percent (the inverse of 1.67). Therefore, the building cost is being applied to the grossed-up NASF for space at 60 percent efficiency. While the staff could not calculate an average efficiency from the reported inventories, project application data was available and indicated projects were on average estimated to be built with an efficiency of 38 to 87 percent. The majority and average of all projects submitted since 2007 was about 60 percent (Figure 2: Project Efficiencies).

DRAFT

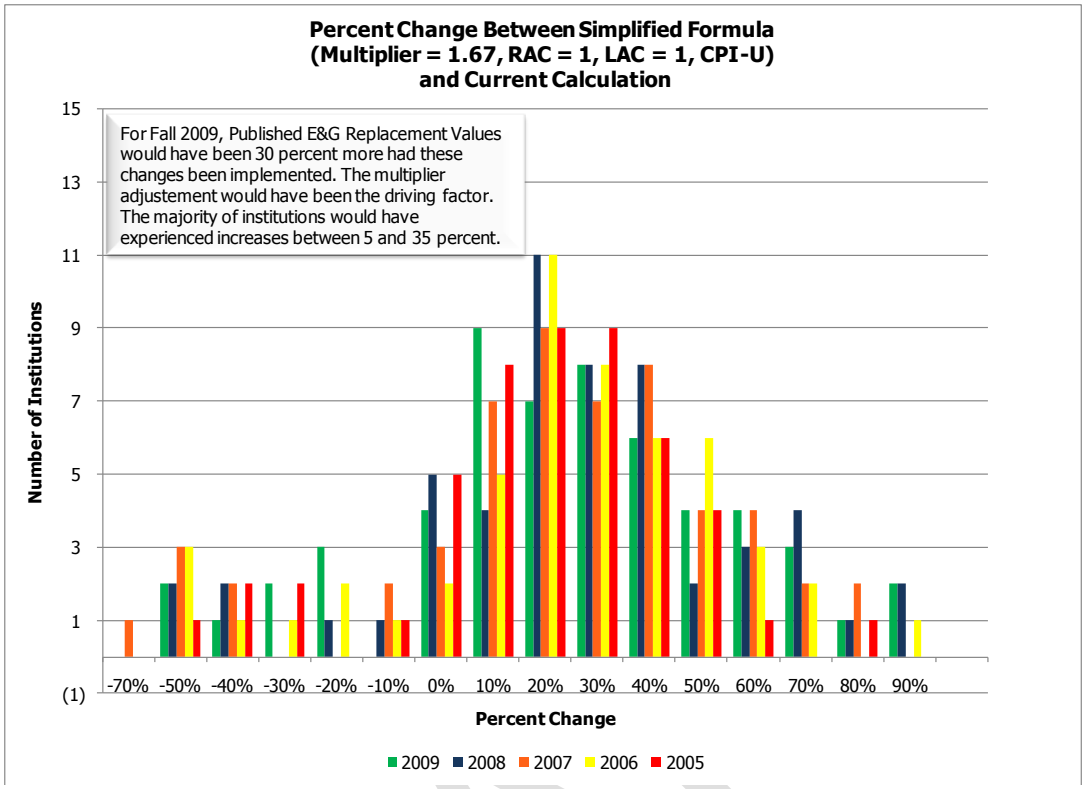

Figure 1: Percent Change

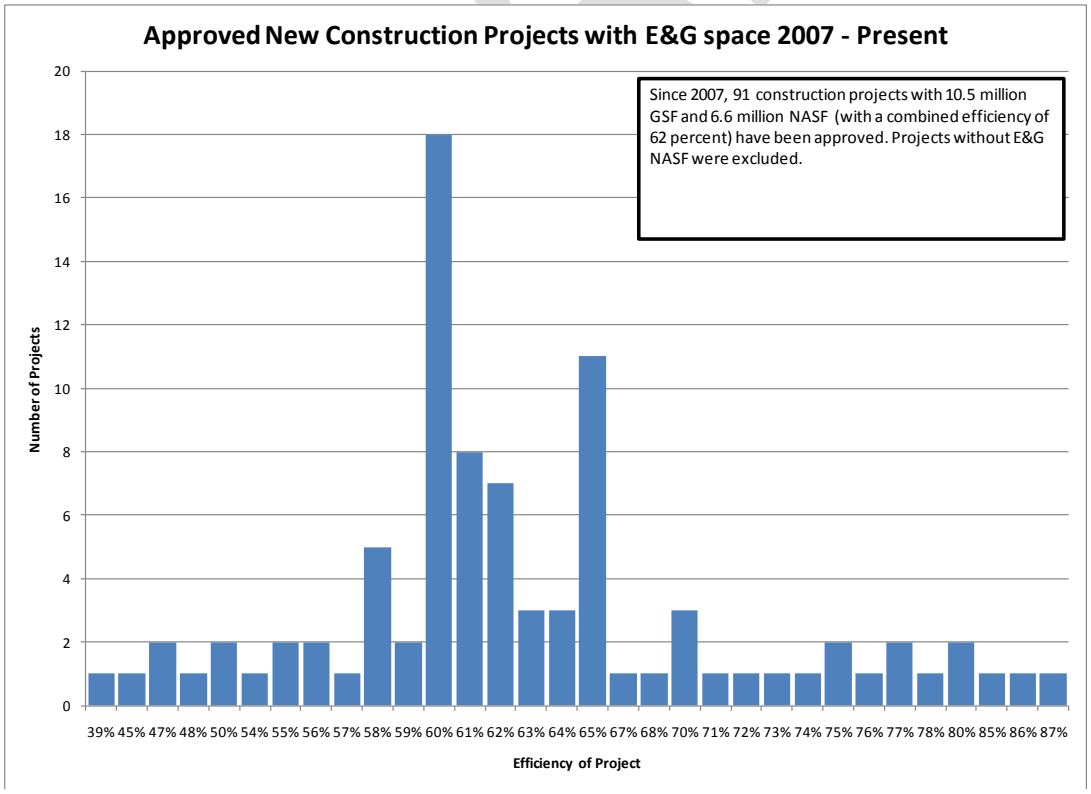

Figure 2: Project Efficiencies

Charge 2
Comment on the validity of calculating an Institution-Wide Replacement Value to be used as a measure of accumulated deferred maintenance.

Staff: Recommends calculating an Institution-Wide Campus Condition Index Value (IWCCIV) using the E&G base rate and reported building gross square feet. An additional 25 percent of the building's gross square feet should be included to account for infrastructure value.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted.

Justification: The staff sees the need for an institution-wide Campus Condition Index Value when reviewing overall institution deferred maintenance. Comparing the deferred maintenance for all space types with the Campus Condition Index Value of only E&G space does not accurately reflect the true condition of the buildings.

The staff recommends the institution-wide calculation include an additional 25 percent of the building's gross square feet to account for infrastructure costs. The 25 percent increase is based on an article published by Facilities Manager in 2004 (Weidner , 2004) .

The workgroup surveyed their institutions and concluded that of the four institutions (two partial) that replied the campuses had a 27 percent infrastructure to non-infrastructure value. The workgroup realized this was not a representative sample, concurred with the use of 25 percent, and agreed this coefficient should be reviewed during the next workgroup session planned in 2013.

The group discussed adding the infrastructure coefficient to the E&G formula; however, it is the staff's intention to use the E&G CCI value at the building level. The reporting tool as recommended directs institutions to report deferred maintenance at the building level with infrastructure projects as a separate entity. Including the infrastructure coefficient in the E&G formula would complicate comparing a building's E&G CCI value to its deferred maintenance.

Charge 3
Comment on the validity of removing the Room Adjustment Coefficients (RAC) from the calculation.

Staff: Recommends removing the RAC from the calculations.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations were adopted.

Justification: Initially introduced by the 2000 advisory committee to account for the varying cost of constructing different types of space, the coefficient is based on data provided by RS Means. The coefficient is calculated by matching RS Means building types to the Board published Space Use Codes. The value for each space use code is divided by the value for a

DRAFT

classroom (110). While calculated each year by the staff, these ratios have not changed in the 10 years they have been used.

The staff calculated Campus Condition Index Values for the last five years excluding the RAC and compared to the published values. The results show over 25 institutions' values would increase less than 10 percent by excluding the coefficient. One institution would have lost less than 5 percent and less than 10 institutions would have gained more than 10 percent. Removing the coefficient has no material impact to the values and therefore the complexity of maintaining the coefficient is not warranted.

Charge 4
Comment on the validity of removing the Location Adjustment Coefficients (LAC) from the calculation.

Staff: Recommends removing the LAC from the calculations.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted.

Justification: Initially introduced by the 2000 advisory committee to account for the varying construction cost for similar space types in varying locations across the state, the coefficient is based on data provided by RS Means. The staff matches the institution's main campus zip code to the RS Means cost to construct a two-story classroom building. Each institution's value is divided by the value for Houston to establish the coefficient.

The workgroup stated RS Means does not accurately reflect the construction cost variances experienced at the institutional level as they often hire out of region labor forces due to lack of local expertise and availability.

When values are calculated without the LAC using the last five years' data, the results show the values on average would have been 8 percent higher with the majority of institutions gaining less than 13 percent and no more than 30 percent. Removing the coefficient has no material impact to the values; therefore the complexity of maintaining the coefficient is not warranted.

Charge 5
Comment on the validity of using CPI-U versus RS Means Historical Data for calculating the Time Adjustment Factor (Inflation Factor).

Staff: Recommends using CPI-U to adjust project costs in the base rate calculation.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted.

Justification: As shown in Figure 3: CPI-U vs RS Means, CPI-U does not significantly vary from the index calculated on RS Means historical data in the short-term. In the last five years, the base rate has been calculated on projects no older than three years. Additionally, the CPI-U is readily available to all institutions unlike the RS Means data, which is purchased annually by the Board.

DRAFT

Workgroup members stated RS Means does not accurately account for the inflation experienced by the institutions. Figure 4: UT System Cost Escalation depicts the change in cost experienced by The University of Texas System.

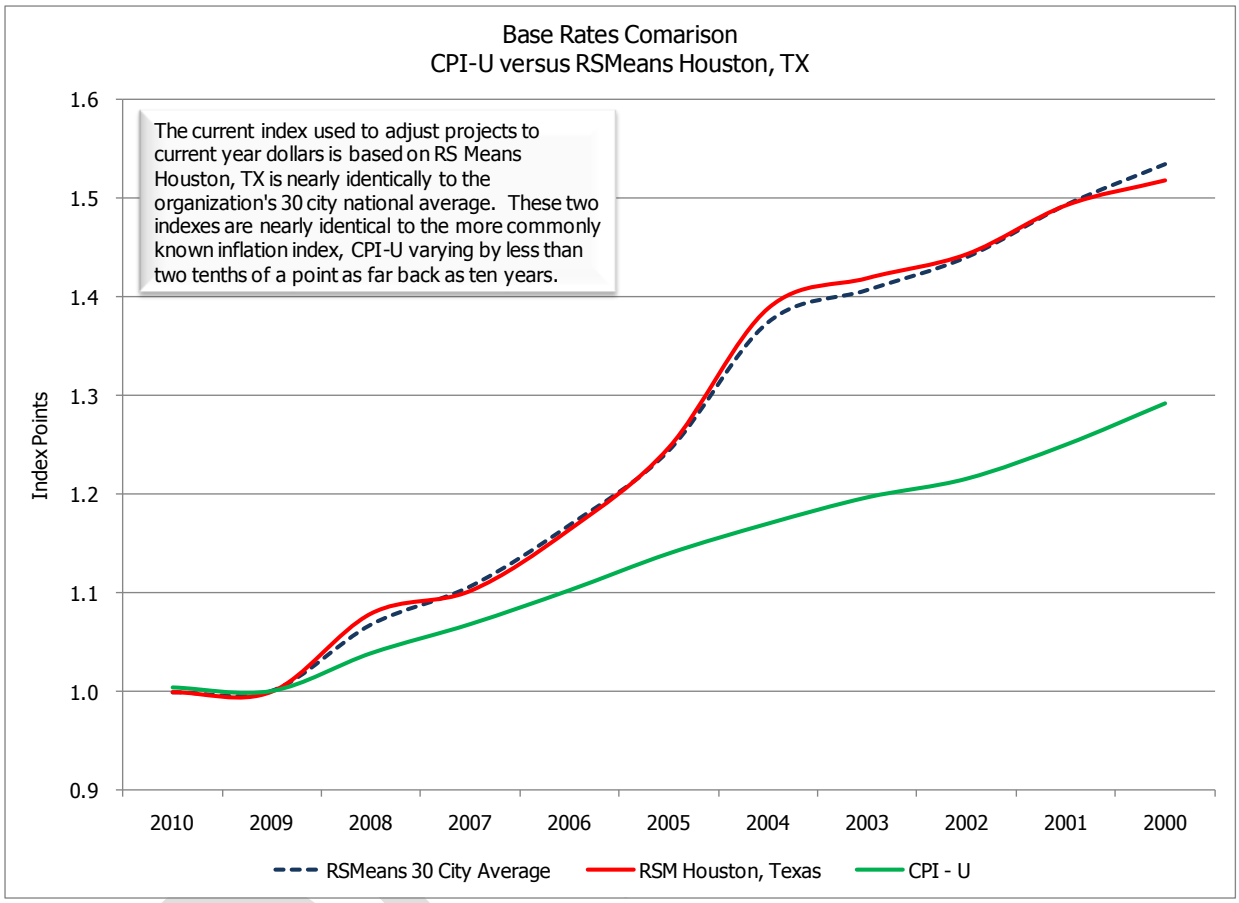

Figure 3: CPI-U vs RS Means

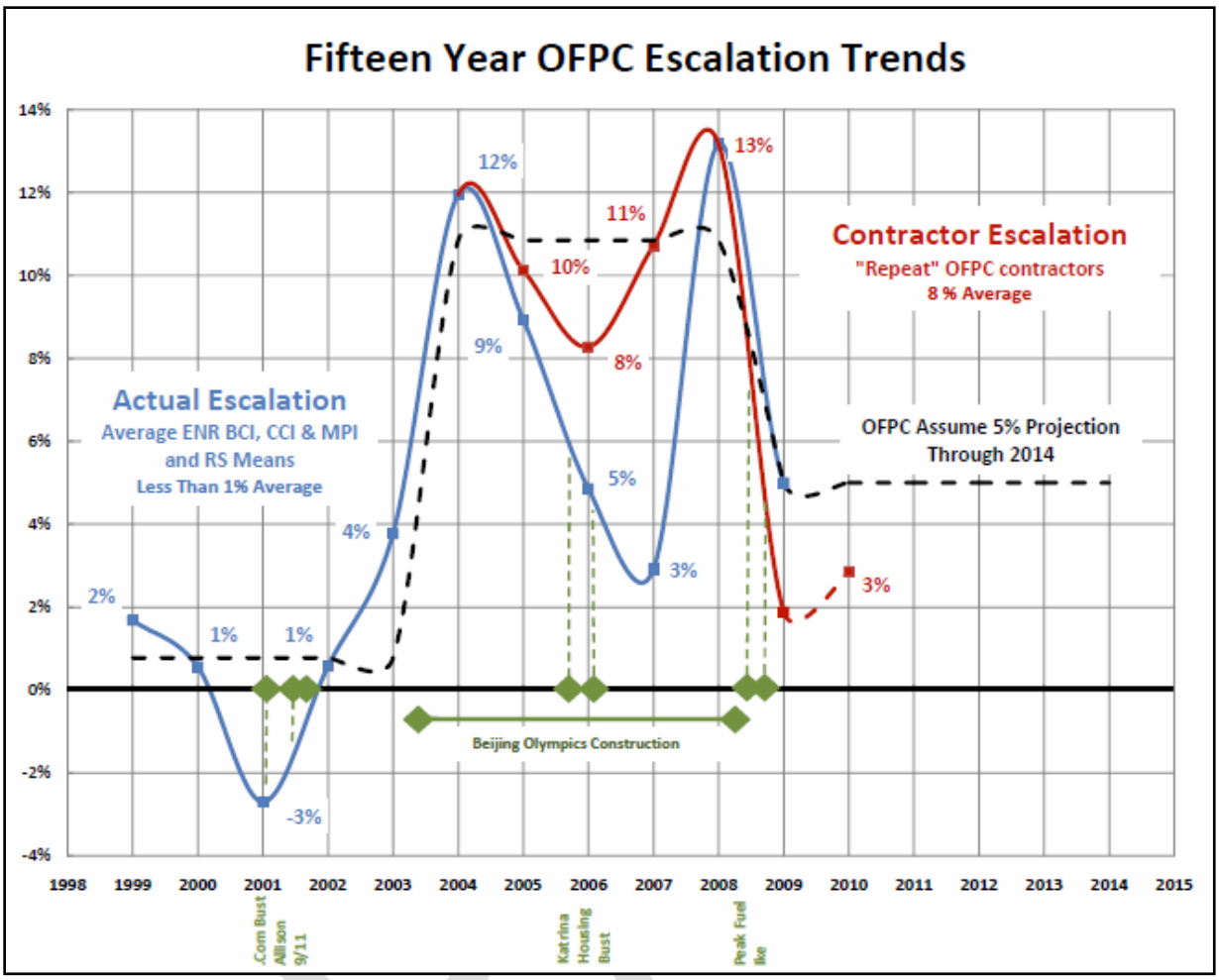

Figure 4: UT System Cost Escalation

Base Rate Review: The workgroup added a review of the existing base rate calculation to the set of charges.

Workgroup: Recommends applying both a General Academic Institution (GAI) and a Health-Related Institution (HRI) base rate to the staff recommended formulas.

Base Rate $_{GAI}$ - the latest 10 approved GAI projects with more than 50,000 GSF and some E&G NASF space, General Classroom and General Office facility types, and project costs CPI-U adjusted by project start year (no adjustment for location).

Base Rate $_{HRI}$ - the latest 10 approved HRI projects with more than 50,000 GSF and some E&G space, all facility types (Classroom, General; Office, General; Other; Medical/Healthcare, RHAC; Laboratory, Medical/Healthcare; Laboratory, General; Healthcare Facility, Hospital; Healthcare Facility, Clinic; Classroom, Medical/Healthcare), and project costs CPI-U adjusted by project start year (no adjustment for location).

Staff: Concurs with the workgroup's recommendations.

Justification: The group reviewed and determined a base rate that includes all Auxiliary facility types did not add enough value to warrant its use and concluded the E&G base rate adequately approximated the value of non-E&G space.

Some members preferred a minimum of two years or 15 projects included in the base rate. However, the majority concluded the latest 10 projects made the base rate more meaningful to the current construction environment. The group reviewed the inclusion of projects with the facility type "other" and deemed that it was falsely skewing the GAI base rate.

The group determined the average size of buildings in Texas public institutions to be 35,000 gross square feet. Base rates were calculated using this threshold in place of the 50,000 gross square feet in use today. The resulting base rates did not accurately reflect the value of the space over the last five years, so the group recommends maintaining the 50,000 gross square foot threshold and only including projects with educational and general space in the base rate calculation.

Note: A building's Campus Condition Index Value is set to zero if the Owner Code does not equal 1, 2, or 3; or the Building Type does not equal 1, 2, 3, 4, 5, 6, 7, or H in the building inventory. This is consistent with the calculations of the last 10 years with the exception of rooms and buildings under renovation. Buildings under renovation at the time of inventory have historically been excluded; however the workgroup proposed including the buildings in the institution-wide valuation and the staff concurred. The E&G Campus Condition Index Value calculation will continue to exclude buildings and rooms under renovation as there is no way to determine the amount of E&G NASF space planned for the rooms at the completion of the renovations with the data that is collected at this time.

DRAFT

Deferred Maintenance

Charge 1
Assess the definitions currently used by the THECB and provide recommendations for modification.

Staff: Recommends the modified definitions listed in the glossary of terms in this document to replace the existing terms.

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted.

Justification: The reengineered definitions, used to define the calculation parameters, refine the ratio used to quantify the condition of the institutions' facilities. The proposal reduces the scope of deferred maintenance to items in need of repair and replacement and clarifies the terms used to define the types of maintenance that are not deferred maintenance. The objective of these changes is to reduce confusion and better inform the Board.

Figure 5: Maintenance Flow Chart shows a decision chart mapping how different maintenance items flow into the various types of maintenance defined.

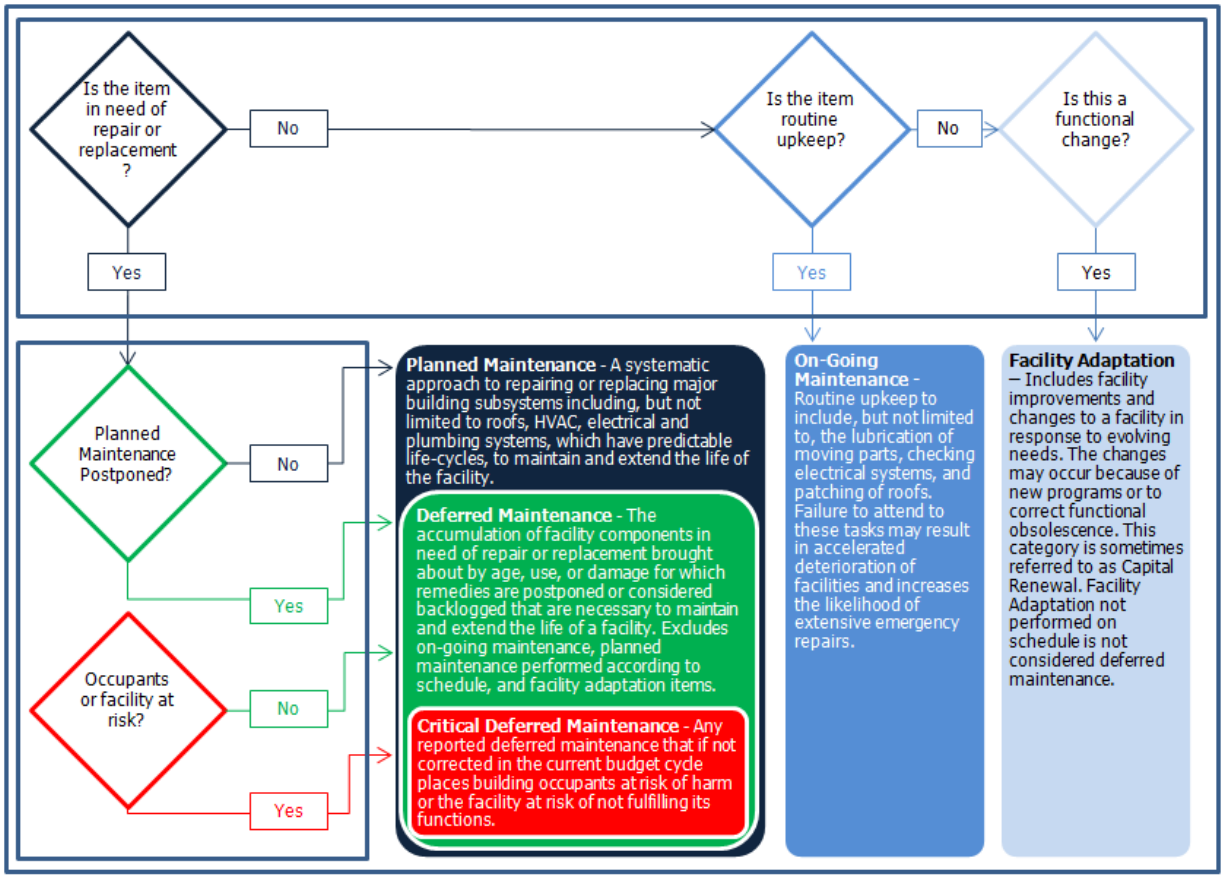

Figure 5: Maintenance Flow Chart

Charge 2
Consider the use of an ordinal measure (e.g. facilities condition index) as opposed to a nominal measure (i.e. the currently used 5% cap) and provide recommendations for implementation.

Staff: Recommends implementing an ordinal measure to categorize institutions with a Campus Condition Index (CCI) up to 5 percent as "Good", between 5 and 10 percent as "Fair", and 10 percent or greater as "Poor". Additionally, institutions with a Fair or Poor CCI would submit a plan of action on how to address deferred maintenance upon the publication of the Board's annual report. Institutions with a rating of good would be considered as meeting Board standard.

The measure is the sum of the institution's deferred maintenance reported on the "Institution Maintenance Report" divided by the Campus Condition Index value. The E&G standard is calculated by multiplying the deferred maintenance for a building by the E&G gross square feet and dividing by the building gross square feet. This product is divided by the E&G CCI value. E&G NASF is converted to E&G gross using the multiplier (1.67).

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted with the alteration that only institutions with a Poor CCI submit a plan of action on how to address deferred maintenance upon the publication of the Board's annual report and be required to present at committee and Board meetings.

Justification: The staff and the group agree that the proposed system varies from the nationally accepted definition of a facilities condition index (FCI); however, the system is similar enough in measure to afford the application of the qualifying range suggested in much of the literature around FCI. This range is suggested to be set at 5 and 10 percent of the estimated facilities' value（State Council of Higher Education，2001）. The application of an ordinal measure makes ready ease to not only a positive result, but also the severity of a negative one.

Charge 3
Identify the disincentives to accurate and complete reporting of deferred maintenance. Provide recommendations that meet the statutory requirements in place for the THECB, minimize the real and perceived disincentives to accurate reporting, and that meet the needs of the institution; using existing reporting data if possible.

Staff: Recommends reducing the disincentives associated with accurate and complete reporting by requesting institutions report all but on-going maintenance annually to the Board. Institutions would report maintenance by building instead of by project. The report would include a summarization of the building maintenance by type. Additionally, institutions would report their priority (top five) maintenance projects (Figure 6: Institution Maintenance Report).

Workgroup: Concurs with the staff's recommendation under the condition all of the staff's recommendations are adopted with the exception that the proposed report include an emergency item in the list of summary maintenance types and that the unbudgeted-current year category be replaced with a residual backlog category and include only critical and deferred maintenance.

DRAFT

Justification: The group reviewed a variety of disincentives associated with fully reporting deferred maintenance. The main issues hinged on the fact the number is used to control a standard applied to capital project requests. The group accepts the continuation of this use of the data and sees the alteration of the scope of the definitions and thresholds as an alternative resolution to the disincentives of continuing the use of the standard. As seen in

		Recommended Campus Condition Index Values		Percent of Campus Condition Index Value		Fall 2
FICE	Institution	Educational and General	Institution-Wide	5%	10%	Published Educational and General
003655	UT-System	96,882,240	214,185,358	4,844,112	9,688,224	79,938,292
003656	UT-Arlington	1,027,852,452	2,159,255,437	51,392,623	102,785,245	909,833,518
003658	UT-Austin	4,185,220,583	9,577,146,719	209,261,029	418,522,058	2,613,674,435
009741	UT-Dallas	622,144,474	1,256,300,966	31,107,224	62,214,447	333,791,963
003661	UT-El Paso	822,841,293	1,970,809,418	41,142,065	82,284,129	729,415,486
003599	UT-Pan American	579,663,146	1,017,848,849	28,983,157	57,966,315	436,758,382
030646	UT-Brownsville	117,440,243	164,163,096	5,872,012	11,744,024	106,791,667
009930	UT-Permian Basin	132,960,918	349,524,168	6,648,046	13,296,092	111,817,756
010115	UT-San Antonio	826,877,007	1,928,391,186	41,343,850	82,687,701	587,896,534
011163	UT-Tyler	206,469,007	487,578,797	10,323,450	20,646,901	136,420,529
000030	UT-SMC-Dallas	1,661,289,569	4,378,676,831	83,064,478	166,128,957	2,528,301,380
104952	UT-MB-Galveston	1,133,356,445	3,312,325,444	56,667,822	113,335,645	1,947,715,673
011618	UT-HSC-Houston	1,181,274,555	2,733,627,544	59,063,728	118,127,455	1,399,291,476
000040	UT-HSC-San Antonio	1,105,122,194	1,904,532,225	55,256,110	110,512,219	1,019,942,922
025554	UT-MD-Anderson	1,348,851,124	5,897,519,025	67,442,556	134,885,112	2,941,229,712
000404	UT-HSC-Tyler	97,072,807	382,655,906	4,853,640	9,707,281	206,339,200
003629	TAMU-System	60,262,600	136,427,846	3,013,130	6,026,260	86,427,275
003632	TAMU (Includes Agencies)	4,038,850,144	9,740,389,835	201,942,507	403,885,014	2,458,909,522
010298	TAMU-Galveston	104,725,989	211,498,370	5,236,299	10,472,599	95,615,110
003630	Prairie View	458,571,034	1,051,303,612	22,928,552	45,857,103	300,511,520
003631	Tarleton	380,163,941	767,641,434	19,008,197	38,016,394	266,982,246
011161	TAMU-Corpus Christi	301,562,433	508,321,152	15,078,122	30,156,243	182,085,113
003639	TAMU-Kingsville	421,357,508	895,256,520	21,067,875	42,135,751	346,356,279
009651	TAM-International	193,852,963	373,384,232	9,692,648	19,385,296	150,755,632
003665	West Texas	413,283,386	1,071,465,410	20,664,169	41,328,339	322,128,156
003565	TAMU-Commerce	355,431,034	893,508,733	17,771,552	35,543,103	232,689,501
029269	TAMU-Texarkana	44,616,983	69,263,643	2,230,849	4,461,698	38,669,969
103631	TAMU-Central Texas	-	-	-	-	-
103639	TAMU-San Antonio	-	-	-	-	-
000089	TAMU-SHSC	402,374,051	739,099,256	20,118,703	40,237,405	404,340,402
011721	UH-System	55,283,038	119,274,985	2,764,152	5,528,304	70,787,467
003652	UH	1,529,097,481	3,133,681,764	76,454,874	152,909,748	1,437,428,137
011711	UH-Clear Lake	255,606,653	343,137,167	12,780,333	25,560,665	214,665,417
012826	UH-Downtown	272,992,990	606,959,496	13,649,649	27,299,299	235,610,433
013231	UH-Victoria	48,001,982	86,846,790	2,400,099	4,800,198	50,055,903
439154	TTU-System	-	3,945,516	-	-	-
003644	Texas Tech	1,458,988,386	3,552,471,759	72,949,419	145,898,839	910,541,900
003541	Angelo	295,143,801	788,591,286	14,757,190	29,514,380	231,921,767
000412	Texas Tech-UHSC	842,529,490	1,322,931,788	42,126,474	84,252,949	755,149,266
103594	UNT-System	17,777,377	71,201,891	888,869	1,777,738	12,572,337
003594	North Texas	1,133,642,192	2,705,651,782	56,682,110	113,364,219	955,800,215
113594	North Texas-Dallas	28,171,825	35,214,781	1,408,591	2,817,183	26,488,451
000130	North Texas HSC-Fort Worth	297,745,134	704,247,600	14,887,257	29,774,513	356,761,884

Figure 7: Methodology Comparison, the revised methodology results in a slightly higher denominator for most institutions. The comparison uses the fall 2009 reported deferred maintenance values, which do not include items below $10,000, but does proportion the deferred maintenance by the amount of gross E&G to overall gross square feet in the building. The revised deferred maintenance definition will exclude some items reported in the fall of

2009. The group, while not able to provide revised numbers, anticipated the E&G deferred maintenance numbers would increase. Note that only two institutions reported above 5 percent over the proposed E&G Campus Condition Index Value.

Institutions do not currently report deferred maintenance projects valued below $10,000. Nor are they required to report planned maintenance or facility adaptation projects. The absence of these values results in an erroneous representation of the institutions' facility condition. Including the additional elements to the reported numbers breaks the ability to trend with past reports essentially creating a clean slate incenting full disclosure.

While the workgroup did not find value in limiting the unbudgeted or unfunded planned maintenance and facilities adaptation maintenance items to the current year and would prefer to leave them off the report or report them in the projected category, the staff sees a value in maintaining a category for these items. In the event institutions' funding is reduced to a point they simply cannot fund items in the current year and their completion is imperative, there would be a means to communicate this type of activity to the Board. Referring to the critical and deferred maintenance columns of the "Unbudgeted" category as "Residual Backlog" could be confusing, as the schema does not employ the term "Backlog". The staff considers all deferred maintenance to be current year. While the portion of the deferred maintenance scheduled in the projected category is not to be reported in the unbudgeted category, all uncompleted deferred maintenance is to be reported in one of the three future looking categories in the report (Budgeted, Unbudgeted, or Projected).

Texas Higher Education Coordinating Board – Institution Maintenance Report

Institution Name	Mountain View University
FICE	000000
Report Year	2020

Section 1: Building Summary – Institution Planned Maintenance and Facility Adaptation itemized by building. Budgeted and Unbudgeted Planned Maintenance should total to be the complete known maintenance need (excluding on-going maintenance and including deferred and critical deferred). All buildings on a campus both Educational and General and Auxiliary should be reported. Maintenance on leased buildings where the institution is not financially responsible for maintaining the building's condition should not be included. Projects scopes including multiple structures should be prorated out to each structure to be improved. Infrastructure projects should be combined into a single reported item.

Building		Expenditures – Previous Year				Budgeted – Current Year				Unbudgeted – Current Year				Projected – Years 2 Through 5			
		Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation
			Deferred Maintenance				Deferred Maintenance				Deferred Maintenance				Deferred Maintenance		
Number	Name			Critical Deferred				Critical Deferred				Critical Deferred				Critical Deferred	
	Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Section 2: Maintenance Type – Categorize the totals reported in section 1 of this report by maintenance type. The totals at the bottom of this section must match section 1.

Maintenance Type	Expenditures – Previous Year				Budgeted – Current Year				Unbudgeted – Current Year				Projected – Years 2 Through 5			
	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation
		Deferred Maintenance				Deferred Maintenance				Deferred Maintenance				Deferred Maintenance		
			Critical Deferred				Critical Deferred				Critical Deferred				Critical Deferred	
Architectural																
HVAC																
Plumbing and Electrical																
Safety																
Legal and Mandatory																
Other																
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Section 3: Top Five Projects – Of the amounts listed in section 1 of this report, list the institution's top five projects. The totals on this section will not match, but cannot exceed the totals in sections 1.

Project		Budgeted – Current Year				Unbudgeted – Current Year				Projected – Years 2 Through 5			
		Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation	Planned Maintenance			Facility Adaptation
			Deferred Maintenance				Deferred Maintenance				Deferred Maintenance		
Priority	Name: Description			Critical Deferred				Critical Deferred				Critical Deferred	
1													
2													
3													
4													
5													
	Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Figure 6: Institution Maintenance Report

FICE	Institution	Recommended Campus Condition Index Values		Percent of Campus Condition Index Value		Fall 2
		Educational and General	Institution-Wide	5%	10%	Published Educational and General
003655	UT-System	96,882,240	214,185,358	4,844,112	9,688,224	79,938,292
003656	UT-Arlington	1,027,852,452	2,159,255,437	51,392,623	102,785,245	909,833,518
003658	UT-Austin	4,185,220,583	9,577,146,719	209,261,029	418,522,058	2,613,674,435
009741	UT-Dallas	622,144,474	1,256,300,966	31,107,224	62,214,447	333,791,963
003661	UT-El Paso	822,841,293	1,970,809,418	41,142,065	82,284,129	729,415,486
003599	UT-Pan American	579,663,146	1,017,848,849	28,983,157	57,966,315	436,758,382
030646	UT-Brownsville	117,440,243	164,163,096	5,872,012	11,744,024	106,791,667
009930	UT-Permian Basin	132,960,918	349,524,168	6,648,046	13,296,092	111,817,756
010115	UT-San Antonio	826,877,007	1,928,391,186	41,343,850	82,687,701	587,896,534
011163	UT-Tyler	206,469,007	487,578,797	10,323,450	20,646,901	136,420,529
000030	UT-SMC-Dallas	1,661,289,569	4,378,676,831	83,064,478	166,128,957	2,528,301,380
104952	UT-MB-Galveston	1,133,356,445	3,312,325,444	56,667,822	113,335,645	1,947,715,673
011618	UT-HSC-Houston	1,181,274,555	2,733,627,544	59,063,728	118,127,455	1,399,291,476
000040	UT-HSC-San Antonio	1,105,122,194	1,904,532,225	55,256,110	110,512,219	1,019,942,922
025554	UT-MD-Anderson	1,348,851,124	5,897,519,025	67,442,556	134,885,112	2,941,229,712
000404	UT-HSC-Tyler	97,072,807	382,655,906	4,853,640	9,707,281	206,339,200
003629	TAMU-System	60,262,600	136,427,846	3,013,130	6,026,260	86,427,275
003632	TAMU (Includes Agencies)	4,038,850,144	9,740,389,835	201,942,507	403,885,014	2,458,909,522
010298	TAMU-Galveston	104,725,989	211,498,370	5,236,299	10,472,599	95,615,110
003630	Prairie View	458,571,034	1,051,303,612	22,928,552	45,857,103	300,511,520
003631	Tarleton	380,163,941	767,641,434	19,008,197	38,016,394	266,982,246
011161	TAMU-Corpus Christi	301,562,433	508,321,152	15,078,122	30,156,243	182,085,113
003639	TAMU-Kingsville	421,357,508	895,256,520	21,067,875	42,135,751	346,356,279
009651	TAM-International	193,852,963	373,384,232	9,692,648	19,385,296	150,755,632
003665	West Texas	413,283,386	1,071,465,410	20,664,169	41,328,339	322,128,156
003565	TAMU-Commerce	355,431,034	893,508,733	17,771,552	35,543,103	232,689,501
029269	TAMU-Texarkana	44,616,983	69,263,643	2,230,849	4,461,698	38,669,969
103631	TAMU-Central Texas	-	-	-	-	-
103639	TAMU-San Antonio	-	-	-	-	-
000089	TAMU-SHSC	402,374,051	739,099,256	20,118,703	40,237,405	404,340,402
011721	UH-System	55,283,038	119,274,985	2,764,152	5,528,304	70,787,467
003652	UH	1,529,097,481	3,133,681,764	76,454,874	152,909,748	1,437,428,137
011711	UH-Clear Lake	255,606,653	343,137,167	12,780,333	25,560,665	214,665,417
012826	UH-Downtown	272,992,990	606,959,496	13,649,649	27,299,299	235,610,433
013231	UH-Victoria	48,001,982	86,846,790	2,400,099	4,800,198	50,055,903
439154	TTU-System	-	3,945,516	-	-	-
003644	Texas Tech	1,458,988,386	3,552,471,759	72,949,419	145,898,839	910,541,900
003541	Angelo	295,143,801	788,591,286	14,757,190	29,514,380	231,921,767
000412	Texas Tech-UHSC	842,529,490	1,322,931,788	42,126,474	84,252,949	755,149,266
103594	UNT-System	17,777,377	71,201,891	888,869	1,777,738	12,572,337
003594	North Texas	1,133,642,192	2,705,651,782	56,682,110	113,364,219	955,800,215
113594	North Texas-Dallas	28,171,825	35,214,781	1,408,591	2,817,183	26,488,451
000130	North Texas HSC-Fort Worth	297,745,134	704,247,600	14,887,257	29,774,513	356,761,884

Figure 7: Methodology Comparison

Charge 4
Consider the integration of energy conservation into the reporting of deferred maintenance.

Staff: Recommends not integrating energy conservation into the reporting of deferred maintenance.

Workgroup: Concurred with the staff's recommendation.

Justification: The workgroup and staff agreed that energy conservation projects do not functionally fit into deferred maintenance reporting. While many of these projects effect the cost of clearing deferred maintenance items depending on the level of energy conservation deployed in the solutions, the logical reporting vehicle is the capital expenditures plan (though most would not meet the threshold) or the facility adaptation columns of the proposed reporting tool.

Charge 5
Discuss and provide recommendations for a target amount of an institutional operating budget that should be spent on the various aspects of deferred maintenance/capital renewal

Staff: Recommends a target of 3 percent of an institution's annual operating budget be spent on the various aspects of deferred maintenance and facilities adaptation.

Workgroup: Recommends the collection of more data prior to declaring the appropriate level of an operating budget to be declared. In three years, enough data should have been collected to make an informed decision on this matter.

Justification: Well-founded authors on this subject support the dedication of 1.5 to 3.0 percent of an operating budget to deferred maintenance and facilities adaptation (Bareither, 1977) and (Kaiser, 1996).

The workgroup recommended the implemented solution be reviewed by a similar workgroup on its third anniversary.

DRAFT

Glossary of Terms

Architectural – items performed to correct architectural structure deficiencies in the building to include the correction to defects in the foundation, walls, ceiling, roof, etc.

Base Rate $_{sector}$ – Calculated annually, the average cost per square foot of the 10 latest THECB approved new construction projects with more than 50,000 gross square feet and some Educational and General Net Assignable Square Feet. Project costs are CPI-U inflation adjusted. Costs in scope include all Professional Services (Architectural/Design Service, Project Management (System), Project Management (Contract), Other Professional Fees, Administrative Costs, and Property Acquisition Fees).

> The General Academic Institution sector rate is based on projects with office, general; and classroom, general facility types only.
>
> The Health-Related Institution sector rate is based on projects with facility types classroom, general; office, general; other; Medical/ Healthcare, RHAC; Laboratory, Medical/Healthcare; Laboratory, General; Healthcare Facility, Hospital; Healthcare Facility, Clinic; Classroom, Medical/Healthcare.

Budgeted – Items planned and funded in the next five years.

Critical Deferred Maintenance – Any deferred maintenance that if not corrected in the current budget cycle places its building occupants at risk of harm or the facility at risk of not fulfilling its functions.

Deferred Maintenance – The accumulation of facility components in need of repair or replacement brought about by age, use, or damage for which remedies are postponed or considered backlogged that is necessary to maintain and extend the life of a facility. This includes repairs postponed due to funding limitations. Deferred maintenance excludes on-going maintenance, planned maintenance performed according to schedule, and facility adaptation items.

Campus Condition Index (CCI) – A comparative indicator of the relative condition of facilities calculated by dividing the deferred maintenance backlog by the current Campus Condition Index value. This may be calculated for an individual building, group of buildings, or an entire campus.

Campus Condition Index Value – The Institution-Wide relative value of an institution's facilities, as determined annually by the Board. The method of calculation is based on approved Board project costs. Campus Condition Index Values are calculated for Educational and General (EGCCIV) space and Institution-Wide (IWCCIV) space. A 25 percent add-on is included to account for the cost of necessary infrastructure. These are NOT to be used for insurance purposes.

Educational and General Net Assignable Square Feet (E&G NASF) – Institution report NASF not meeting the following criteria:

> Building Type is 6, 7, 8, 9, or R

DRAFT

Space Use Code is 050, 060, 070, 523, 630, 635, 660, 665, 670, 675, 750, 755, M10, U10, W10, WWW, XXX, YYY, ZZZ, or is greater than 899

Space Use Code is between 800 and 899 without a Functional Category of 11, 12, 15, 21, or 22

Functional Category is less than 10, between 29 and 41, greater than 89, or is 42, 52, 65, or 66

Functional Category is 55, 56, or 57 with a CIP Code not between 740000 and 750000

CIP Code is between 850001 and 859999, 817500, or between 720000 and 739999.

Educational and General Campus Condition Index Value (EGCCIV) Formula –
Sum of (E&G NASF $_{Building}$ * Base Rate $_{sector}$ * Multiplier $_{GSF}$)

Expenditures – Items completed in the prior fiscal year. Payments may or may not have been booked, but items are complete.

Facility Adaptation – Includes facility improvements and changes to a facility in response to evolving needs. The changes may occur because of new programs or to correct functional obsolescence. This category is sometimes referred to as Capital Renewal.

Gross Square Feet - Building (GSF $_{building}$) – The GSF in the Facilities Building Inventory.

Infrastructure - The basic physical structures needed for the operation of a campus to include roads, water supply, sewers, power grids, telecommunications, and so forth. Systems within five feet of a building are considered building systems and are not infrastructure.

Inflation Factor (IF) – CPI-U index based on current year and inflation adjusting past year projects to current year from estimated project start year. No inflation forecast is used. It is assumed inflation adjustments are included in the estimates of approved projects with future year start dates.

Institution-Wide Campus Condition Index Value Formula (IWCCIV) –
Sum of (GSF $_{Building}$ * Base Rate $_{sector}$ * Multiplier $_{Infrastructure}$)

HVAC – items performed to correct deficiencies in the heating, ventilation, and air conditioning systems in the building.

Legal and Mandatory Requirements (L&M) – item performed to comply with legislative and mandated requirements (Americans Disabilities Act, Texas Water Commission, asbestos abatement, PCB removal, underground storage tank removal, CFC reduction, hazardous waste, recycling, historical buildings, etc

Multiplier $_{GSF}$ – The Gross Square Foot Multiplier converts E&G NASF to GSF. A standard multiplier of 1.67 (60 percent efficiency) is assumed for all buildings. The product of this multiplier and the building's E&G NASF will exceed the reported gross for buildings with efficiencies higher than 60 percent. The building's gross is substituted for the product in these

DRAFT

instances.

Multiplier $_{\text{Infrastructure}}$ – The Infrastructure Multiplier accounts for the cost of the surrounding infrastructure required to support campus facilities. A standard 25 percent is used for all institutions.

On-going Maintenance – Routine upkeep to include, but not limited to, the lubrication of moving parts, checking electrical systems, and patching of roofs. Failure to attend to these tasks may result in accelerated deterioration of facilities and increases the likelihood of extensive emergency repairs. On-going maintenance is normally funded by an institution's operating budget.

Other – maintenance items not fitting the Architectural, HVAC, Plumbing and Electrical, Safety, or Legal and Mandatory Requirements types.

Planned Maintenance – A systematic approach to repairing or replacing major building subsystems including, but not limited to roofs, HVAC, electrical and plumbing systems, which have predictable life-cycles, to maintain and extend the life of the facility. This category is sometimes referred to as Facility Renewal or Capital Repair. Planned maintenance is normally funded by an institution's capital budget.

Plumbing and Electrical – items performed to correct deficiencies in the plumbing and electrical systems in the building.

Safety – items performed to ensure the safety of the occupants of a building.

Unbudgeted – Items not scheduled or items not funded.

DRAFT

Appendix A: Campus Condition Index Value Calculation Examples

Base Rate Calculation

Calculate separate base rates for General Academic Institutions (GAI) and Health-Related Institutions (HRI) sectors using the latest 10 projects approved by the Board for institutions in the given sector. Data on the projects is collected from the ICPS database using the following parameters:

Note: Technical State Colleges are considered GAI's for the purposes of these calculations.

Capital Project Sampling Date:
- Immediately following the October Board Meeting

Project Status:
- Approved-Online and Approved-Not-Online

Gross Square Feet (GSF):
- 50,000 or More

Educational and General Gross Net Assignable Square Feet (E&G NASF):
- Greater Than Zero

Facility Type:
- GAI-Classroom, General and Office, General
- HRI-Classroom, General; Office, General; Other; Medical/Healthcare, RHAC; Laboratory, Medical/Healthcare; Laboratory, General; Healthcare Facility, Hospital; Healthcare Facility, Clinic; Classroom, Medical/Healthcare

Construction Type:
- New Construction

Project Costs:
- Total Building Costs
  - Building Costs (New Construction)
  - Fixed Equipment
- Professional Services
  - Architectural/Design Service
  - Project Management (System),
  - Project Management (Contract),
  - Other Professional Fees,
  - Administrative Costs
  - Property Acquisition Fees

Selection Criteria:
- Latest 10 projects sorted by project start date (not approval date)

The green columns in table 1 are an example of a list of projects that would result from the query. To establish the base rate, average the adjusted cost per GSF of the 10 projects for both the GAI and HRI projects.

Cost per GSF:
- For a given project, project cost divided by gross square feet
- [Project Cost/ Gross Square Feet]

DRAFT

Inflation Factor:

- CPI-U Annual Average indexed by project start year
- For a given project, current-year CPI-U value divided by the CPI-U value for the year the institution estimated the project would start
- Projects with a future-year start-year use current-year CPI-U values in the denominator assuming project estimates for projects starting in future-years have been inflation adjusted by the contractors and therefore no inflation adjustment is necessary in these calculations to establish a base rate representative to current cost.
- [Current Year CPI-U/ Start Year CPI-U]

Adjusted Cost per GSF:

- For a given project, Cost per GSF multiplied by the inflation factor.
- [Cost Per GSF/ Inflation Factor]

Base Rate (Average adjusted historical cost per gross square foot):

- Sum of the Adjusted cost per GSF for the 10 projects of a sector and divide by 10
- $\frac{\sum \ (Adjusted\ Cost\ per\ GSF)}{10}$

Table 1 Base Rate Calculations

Project Name	Project Number	Gross Square Feet	Educational and General Square Feet	Facility Type	Start Date	Project Cost	Cost per GSF	Inflation Factor	Adjusted Cost per GSF
ICPS	ICPS	ICPS	ICPS	ICPS	ICPS	ICPS	[Project Cost/ Gross Square Feet]	[Current Year CPI-U/ Start Year CPI-U]	[Cost Per GSF * Inflation Factor]
Project 1	999999-08-001	60,000	36,000	Classroom, General	10/2007	$22,000,000	$367	1.034	$379
Project 2	999998-08-002	110,000	66,000	Office, General	09/2009	41,000,000	$373	1.000	$373
Project 3	999991-08-003	70,000	1	Classroom, General	08/2009	9,250,000	$132	1.000	$132
Project 4	999995-08-004	140,000	84,000	Classroom, General	11/2007	61,600,000	$440	1.034	$455
Project 5	999995-08-005	60,000	31,000	Classroom, General	01/2008	8,917,200	$149	1.000	$149
Project 6	999991-09-006	160,000	96,000	Office, General	06/2008	60,000,000	$375	1.000	$375
Project 7	999999-09-002	90,000	50,000	Classroom, General	01/2009	21,870,000	$243	1.000	$243
Project 8	999991-09-002	70,000	36,000	Classroom, General	06/2008	22,784,000	$326	1.000	$326
Project 9	999999-09-001	60,000	28,000	Office, General	05/2008	22,300,000	$372	1.000	$372
Project 10	999999-09-152	100,000	70,000	Classroom, General	07/2010	19,732,000	$197	1.000	$197
Average Adjusted Historical Cost per Gross Square Foot (Base Rate)									$300

For Example:

In table 1, the Adjusted Cost per GSF for Project 1
Gross Square Feet = 60,000 Project Cost = $22,000,000 Cost per GSF = [Project Cost] / [Gross Square Feet] Cost per GSF = [$22,000,000] / [60,000] Cost per GSF = $367 Start Year = 2007 Current Year = 2009 CPI-U 2007 = 207.342 CPI-U 2009 = 214.537 Inflation Factor = [Current Year CPI-U] / [Start Year CPI-U] Inflation Factor = [214.537] / [207.342] Inflation Factor = 1.034 Adjusted Cost per GSF = [Cost Per GSF] * [Inflation Factor] Adjusted Cost per GSF = [$367] * [1.034] **Adjusted Cost per GSF = $379**

In table 1, the Adjusted Cost per GSF for Project 10
Gross Square Feet = 100,000 Project Cost = $19,732,000 Cost per GSF = [Project Cost] / [Gross Square Feet] Cost per GSF = [$19,732,000] / [100,000] Cost per GSF = $197 Start Year = 2010 Current Year = 2009 CPI-U 2007 = 214.537 [1] CPI-U 2009 = 214.537 Inflation Factor = [Current Year CPI-U] / [Start Year CPI-U] Inflation Factor = [214.537] / [214.537] Inflation Factor = 1.000 Adjusted Cost per GSF = [Cost Per GSF] * [Inflation Factor] Adjusted Cost per GSF = [$197] * [1.000] **Adjusted Cost per GSF = $197** Note 1: Since the start year is a future year, the current year Annual Average CPI- Value is used.

DRAFT

In table 1, the Base Rate
Base Rate = [Sum of 10 Projects' Adjusted Cost per GSF] / 10 Base Rate = [$379 + $373 + $132 + $455 + $149 + $375 + $243 + $326 + $372 + $197] / 10 Base Rate = [$3,000] / 10 **Base Rate = $300**

Education and General Campus Condition Index Value (EGCCIV) Calculation

An institution's EGCCIV is the sum of all building EGCCIVs. Calculate the building EGCCIV by multiplying the building E&G NASF, 1.67, and the sector's base rate. The building E&G NASF is the sum of the room E&G NASF values building's room inventory (Table 2). The EGCCIV value is the product of E&G NASF, 1.67, and the sector's base rate.

The Educational Research Center uses the criteria as defined in the glossary of terms to calculate the E&G NASF reported totals by building in the edit report of the CBM014-Building Inventory Report.

$$\text{Sum of } (\text{E\&G NASF}_{\text{Building}} * \text{Base Rate}_{\text{sector}} * \text{Multiplier}_{\text{GSF}})$$

Table 2 Room Inventory

FICE	Building	Room	NASF	E&G NASF	Space Use Type
999999	000001	000001	1,000	1,000	110
999999	000001	000002	2,000	2,000	210
999999	000001	000003	3,000	2,000[2]	210
999999	000002	000001	4,000	4,000	110
999999	000002	000002	5,000	5,000	210

Note 2: The room's E&G NASF is less than its NASF due to proration. The room has been coded using both E&G and Non-E&G CIP and Functional Use Codes. This is an indication of a mixed-use building.

Table 3 Building Inventory

FICE	Building	GSF	NASF	E&G NASF
999999	000001	10,000	6,000	5,000
999999	000002	15,000	9,000	9,000

Note 3: The NASF and E&G NASF values are summed from Table 2 Room Inventory by building.

DRAFT

For Example:

From table 3, Building 000001
E&G NASF = 5,000 Base Rate = $300 Multiplier = 1.67 EGCCIV = [E&G NASF] * [Base Rate] * [Multiplier] EGCCIV = [5,000] * [$300] * [1.67] **EGCCIV = $2,505,000**

Note 4: The EGCCIV for each building in an institution's building inventory is summed when comparing the overall E&G Campus Condition Index. The E&G CCI excludes infrastructure maintenance or calculated value as infrastructure is defined in the glossary of terms.

Institution-Wide Campus Condition Index Value (IWCCIV) Calculation

Calculate the IWCCIV by summing the product of each building's gross square feet, the sector's base rate, and 1.25.

$$\text{Sum of } (GSF_{Building} * \text{Base Rate}_{sector} * \text{Multiplier}_{Infrastructure})$$

For Example:

From Table 3
Building 000001 GSF = 10,000 Building 000002 GSF = 15,000 Base Rate = $300 Infrastructure Multiplier = 1.25 Building 000001 IWCCIV = [GSF] * [Base Rate] * [Infrastructure Multiplier] Building 000001 IWCCIV = [10,000] * [$300] * [1.25] Building 000001 IWCCIV = $3,750,000 Building 000002 IWCCIV = [15,000] * [$300] * [1.25] Building 000002 IWCCIV = $5,625,000 IWCCIV = [Building 000001 IWCCIV] + [Building 000002 IWCCIV] IWCCIV = [$3,750,000] + [$5,625,000] **IWCCIV = $9,375,000**

DRAFT

Appendix B: Deferred Maintenance Reporting Examples

Institutions are expected to perform comprehensive facility audits either utilizing resident staff or competent consultants. The results of these audits should provide detailed system level maintenance requirements to afford an institution the ability to schedule and budget for the proper maintenance of all institution facilities. The data elements in the Institutional Maintenance Report assume institutions are maintaining a comprehensive system-level maintenance schedule of all facilities to include the cost of completing those maintenance items. In addition to the results of facilities audits, institutions should include any ad hoc maintenance requests that are within the reporting scope.

Institutions should disaggregate maintenance items to the building system level when considering which category and column to report the item under on the Institution Maintenance Report. Remove infrastructure elements from building projects and report the institution-wide infrastructure projects' cost on a single building line in section one of the report. The following examples are to serve as a guideline to demonstrate the intent of the report; however, we recommend experienced professionals be consulted when determining an item's best fit.

Example 1: Expenditures – Previous Year, Planned Maintenance
A 20-year-old building was built with a 20-year roof, which is leaking, but can be repaired with current year funding. The repairs to the roof are significant, but do not involve installing a new roof. The repairs are completed in the current year and the roof is determined to be in good condition and scheduled for inspection in the following year with the expectation the roof is serviceable for another 10 years. Timing – Repaired in the fiscal year discovered Report the cost of repairing this item under the "Expenditure – Previous Year" category in the planned maintenance column. This item would have been considered on-going maintenance if the repairs were insignificant. The scheduled follow-up inspection is considered on-going maintenance and not reported. It was not determined the roof needed to be replaced within the five year period of this report so nothing should be reported in the other categories.

Example 2: Budgeted – Current Year, Planned Maintenance
A building is 20 years old and built with a 20-year roof. The roof is budgeted to be replaced in the current year. Timing – Scheduled to be repaired in the current fiscal year Report the cost to repair or replace this item under the "Budgeted – Current Year" category in the planned maintenance column.

DRAFT

Example 3: Unbudgeted – Current Year, Planned Maintenance
A building is 20 years old and built with a 20-year roof. The roof was scheduled to be replaced in the current year, and upon inspection, it is failing. Due budget cuts, it is determined the project cannot be funded this year. Therefore, the roof will not be budgeted for replacement or repair in the five-year scope of the Institution Maintenance Report. Timing – Not scheduled to be repaired in the current fiscal year or any other report year. Report the cost to repair or replace this item under the "Unbudgeted – Current Year" category in the planned maintenance column. Note: the roof continues to function as designed and therefore is not deferred maintenance.

Example 4: Projected – Years 2 through 5, Planned Maintenance
A building is 20 years old and built with a 20-year roof. The roof was scheduled to be replaced in the current year, but upon inspection, it is determined the maintenance item can be delayed until the following year. Therefore, the roof will not be budgeted for replacement or repair until the next fiscal year. Timing – Rescheduled to be repaired in the next fiscal year. Report the cost to repair or replace this item under the "Projected – Years 2 through 5" category in the planned maintenance column. Note: the roof continues to function as designed and therefore is not deferred maintenance.

Example 5: Expenditures – Previous Year, Deferred Maintenance
A building is 4 years old and built with a 30-year elevator (one of four). The elevator is planned to be replaced in 26 years, but was determined or discovered to be nonoperational during the previous year. It was decided that the building could function without the fourth elevator and management budgeted for its repair or replacement in the following year. The maintenance was completed this year. Timing – Repaired in the fiscal year after discovered Report the cost of repairing or replacing this item under the "Expenditures – Previous Year" category in the Deferred Maintenance column. The item was completed after being deferred for one year. If the expenditure is not being recorded in the institution's annual financial report the same year it is completed, report the item on the Institution Maintenance Report the year it was completed.

Example 6: Budgeted – Current Year, Deferred Maintenance
A building is 4 years old and built with a 30-year elevator (one of four). The elevator is planned to be replaced in 26 years, but was determined or discovered to be nonoperational during the previous year. It was decided that the building could function without the fourth elevator and management budgeted for its repair or replacement in the following year. Timing – Scheduled to be repaired in the fiscal year after discovered

DRAFT

Report the cost of repairing or replacing this item under the "Budgeted – Current Year" category in the Deferred Maintenance column. The item is funded to be corrected in the budget year following its discovery.

Example 7: Unbudgeted – Current Year, Deferred Maintenance

A building is 4 years old and built with a 30-year elevator (one of four). The elevator is planned to be replaced in 26 years, but it was decided that the building could function without the fourth elevator and management decided to not repair or replace it due to the inconvenience of the work or funding limitations. The elevator is not projected to be repaired in the next five years.

Timing – Scheduled to be repaired more than five fiscal years after discovered or never scheduled to be repaired

Report the cost of repairing or replacing this item under the "Unbudgeted – Current Year" category in the Deferred Maintenance column. The item is not funded to be corrected in the budget year following its discovery or any year in the scope of the current-year's report. As all deferred maintenance planned or unplanned, scheduled or unscheduled, budgeted or unbudgeted, funded or unfunded must be reported on the Institution Maintenance Report, this item must be reported in the Unbudgeted – Current Year, Deferred Maintenance column.

Example 8: Projected – Years 2 through 5, Deferred Maintenance

A building is 4 years old and built with a 30-year elevator (one of four). The elevator is planned to be replaced in 26 years, but it was decided that the building could function without the fourth elevator and management decided to repair or replace it in three years the due to the inconvenience of the work or funding limitations.

Timing – Scheduled to be repaired two to five fiscal years after discovered

Report the cost of repairing or replacing this item under the "Project – Years 2 through 5" category in the Deferred Maintenance column. The item is not funded to be corrected in the budget year following its discovery, but is projected to be repaired within five years.

Example 9: Budgeted – Current Year, Facilities Adaptation

The engineering building classrooms were constructed with a 20-student capacity, but in order to meet the institution's *Closing the Gaps* goals the classes need to be modified to a 40-student capacity. The dean of engineering has requested the walls between adjacent classrooms be removed and the classroom teaching stages be repositioned. She has dedicated funds from her budget to complete the work in the current fiscal year.

Timing – Scheduled to be adapted in the current fiscal year.

Report the cost of adaptation under the "Budgeted – Current Year" category in the Facility Adaptation column. The classrooms have no material defects and function as designed. The project calls for changing the design to fit a new need.

DRAFT

Example 10: Unbudgeted – Current Year, Facilities Adaptation
The engineering building classrooms were constructed with a 20-student capacity, but in order to meet the institution's *Closing the Gaps* goals the classes need to be modified to a 40-student capacity. The dean of engineering has requested the walls between adjacent classrooms be removed and the classroom teaching stages be repositioned. There are no funds in the next five years for these modifications. Timing – Scheduled to be adapted in more than five fiscal years or never scheduled to be adapted. Report the cost of adaptation under the "Unbudgeted – Current Year" category in the Facility Adaptation column. The classrooms have no material defects and function as designed. The project calls for changing the design to fit a new need. This is appropriately placed in the unbudgeted category because it is desired, but there is no funding available. By scheduling items in this category and column, the legislature will have an understanding of the unfunded needs at institutions.

Example 11: Projected – Years 2 through 5, Facilities Adaptation
The engineering building classrooms were constructed with a 20-student capacity, but in order to meet the institution's *Closing the Gaps* goals the classes need to be modified to a 40-student capacity. The dean of engineering has requested the walls between adjacent classrooms be removed and the classroom teaching stages be repositioned. There are no funds available in the current fiscal year, but the funding is projected to be available in the following fiscal year. Timing – Scheduled to be adapted in two fiscal years. Report the cost of adaptation under the "Projected – Years 2 through 5" category in the Facility Adaptation column. The classrooms have no material defects and function as designed. The project calls for changing the design to fit a new need. This is unbudgeted, but because funding is potentially available in the following budget cycle, it is not appropriate to place it in the unbudgeted category. It is appropriately considered a projected facility adaptation.

Example 12: Expenditures – Previous Year, Facilities Adaptation
The engineering building classrooms were constructed with a 20-student capacity, but in order to meet the institution's *Closing the Gaps* goals the classes needed to be modified to a 40-student capacity. The dean of engineering had requested the walls between adjacent classrooms be removed and the classroom teaching stages be repositioned. She has dedicated funds from her budget last year to complete the work. The work was completed last fiscal year. Timing – The work was completed last fiscal year. Report the cost of adaptation under the "Expenditures – Previous Year" category in the Facility Adaptation column. The classrooms had no material defects and functioned as designed. The project called for changing the design to fit a new need. Items from the previous year's "Budgeted – Current Year, Facility Adaptation" column or ad hoc items can feed into this column, with dollar amounts updated to actual spend.

DRAFT

DRAFT

Bibliography

BareitherH. *Space Reallignment, Renewal, and Replacement: A concept for budgeting necessary funds to prevent deterioration for physical facilities.*Urbana, IL, University of Illinois Press, 1977.

KaiserHarvey *A Foundation to Uphold: A study of facilities conditions at U.S. colleges and universities.*Alexandria, VA, Association of Higher Education Facilities Officers (APPA), 1996.

KaiserHarvey, *The Facilities Audit: A Process for Improving Facilities Conditions.* Alexandria, Association of Higher Education Facilities Officers (APPA), 1993, Vol. 1, p.114. （ISBN-0-913359-71-8）.

State Council of Higher EducationSCHEV. *State Council of Higher Education.* [Online]23 March 2001. [Cited: 2 March 2010.] http://www.schev.edu/adminfaculty/fcr_guidelines.pdf.

Texas Comptroller of Public Accounts Texas Performance Review ED 13: Challenging the Status Quo Reduce Higher Education Deferred Maintenance. *Window on State Government.* [Online]1 March 1999. [Cited: 1 April 2010] http://www.window.state.tx.us/tpr/tpr5/1ed/ed13.html.

WeidnerTheodoreJ., Ph.D., P.E., AIA What is Current Replacement Value and Why Should You Care?*Association of Physical Plant Administrators.* [Online]1 May 2004. [Cited: 21 March 2010.] http://www.appa.org/files/FMArticles/FM050604Replacement.pdf.

DRAFT

This document is available on the Texas Higher Education Coordinating Board Website: **http://www.thecb.state.tx.us**

For more information, contact:

Texas Higher Education Coordinating Board
P.O. Box 12788
Austin, TX 78711
512/427-6130

Paul Turcotte
Roland Gilmore
Jennifer Gonzales
Program Directors
Planning and Accountability, Finance and Resource Planning

Thomas E. Keaton
Director
Planning and Accountability, Finance and Resource Planning

DRAFT