Report of the
Master Plan Subcommittee
May 16, 2007

Chairs: Ellen O'Connor, Vice Chancellor, Administration & Finance
Gordon Wallace, Professor, Environmental, Earth, & Ocean Sciences

Membership:

- Elsa Auerbach, College of Liberal Arts
- John Benson, Division of Capital Asset Management (DCAM)
- Pat Burns, Athletics
- Larry Chan, Chan Krieger Sieniewicz
- Caroline Coscia, Graduate Student Assembly
- Stephen Crosby, McCormack Graduate School of Policy Studies
- Diane D'Arrigo, Campus Services
- Patrick Day, Student Affairs
- Daryl Ford, Information Technology
- Enrico Marcelli, College of Liberal Arts
- Peter McClure, College of Management
- John Pearson, Undergraduate Student
- Jason Pramas, Graduate Student
- Drew O'Brien, Chancellor's Office
- Michael Shiaris, College of Science & Mathematics
- Gary Siperstein, Center for Social Development and Education
- Nancy Stieber, College of Liberal Arts
- Paul Tucker, College of Liberal Arts
- Jack Wiggin, Urban Harbors Institute
- Mike Williams, DCAM

Charge of Master Plan Subcommittee
Recognizing the need for a comprehensive assessment of the assets and needs of the campus, this group will work with DCAM, the architects and the other committees to develop a plan for the campus space that will support the academic and campus life of UMass Boston for the future.

Proposed Issues
- 25-year horizon for physical plan
- Campus assessment
- Deferred maintenance plan
- In direct support of academic and campus life programs – aligned with strategic priorities
- Living, learning communities
- Welcoming environment
- Implementation and internal and external communication about all activities

Summary of Tasks
The role of the Master Plan Subcommittee (the Subcommittee) in the University's strategic planning process is unique to that of the other Subcommittees in that the formulation of the Master Plan will be driven by the institutional goals and priorities of UMass Boston's long-term Strategic Plan. As such, while the other Subcommittees have been developing recommended strategic priorities for their issue areas, much of the work to date of the Master Plan Subcommittee, which includes DCAM and Chan Krieger Sieniewicz (Chan Krieger), has focused on understanding the current state of academic, campus life, and administrative aspects of UMass Boston through data analysis and presentation, interviews with a representative cross-section of students, faculty, and staff, and facility inspection tours.

Issue areas that were studied include facilities and utilities management, space allocation and utilization, student life, athletics, IT support, and future debt capacity. DCAM and CKS have concurrently been collecting and reviewing all available data about UMass Boston's physical facilities including surveys, drawings, and reports to create an inventory of all documents, as well as improved CAD plans of the entire campus and its individual buildings. CKS has also worked with the University to create an up-to-date inventory of all teaching and campus spaces.

In addition, with the assistance of Chan Krieger and DCAM, a preliminary, high-level facilities assessment is being prepared that examines the repair and upgrade costs of each University building and compares them to each other and to the estimated replacement costs of each facility (a discussion of this preliminary analysis follows later in the report). Lastly, based on campus plans of other universities and the unique physical characteristics of UMass Boston, the

Subcommittee has begun to consider possible options for the future orientation of the campus as well as the location of academic buildings, student housing, indoor/outdoor athletic facilities, open space, and parking facilities.

The work of the Subcommittee will continue through the summer and fall with the goal of presenting the final, high-level Master Plan to the Board of Trustees in December 2007.

Subcommittee Vision and Evolving Recommendations
At its first meeting back in October 2006, it quickly became apparent to members of the Master Plan Subcommittee that without a well-developed, comprehensive Strategic Plan, the Subcommittee could not successfully develop a meaningful and inclusive Campus Master Plan for UMass Boston. As a result, the Subcommittee has formulated a vision statement for its work that emphasizes the importance of a strategic planning document that clearly and comprehensively defines institutional goals and priorities.

In addition, the Subcommittee's vision statement is predicated on key value propositions and the desired future state of the University as articulated at the September 2006 Strategic Planning Retreat including a commitment to quality teaching and research, service to the local and global community, and construction of a state of the art campus.

Moreover, the basis of the Subcommittee's work and vision is equally influenced by the rapidly deteriorating state of the University's physical plant which is the result of years of inadequate resources and deferred maintenance. As such, the need to develop a long-term solution for UMass Boston's physical assets will be a critical component of the Master Plan.

Vision Statement
The Master Plan will develop a physical blueprint for UMass Boston that optimally reflects and supports the strategic priorities and goals developed and recommended by the Chancellor's Strategic Planning Task Force. The physical environment will be renewed and rebuilt to meet the needs of students, faculty, and staff as they contribute to the University's leadership in public higher education and research in the twenty-first century while pursuing its urban mission. The re-centering and reorganizing of campus space will result in a more vibrant and engaging University life. State of the art facilities will inspire and connect our students, faculty, and staff with the University's local, national and global communities and serve to bolster ties with our surrounding neighbors.

Evolving Recommendations/Master Plan Elements
The Subcommittee's evolving thinking in regard to the future physical blueprint of UMass Boston is consistent with this vision and is being shaped by tasks undertaken to date by the Subcommittee and the emerging recommendations of the Strategic Planning Task Force. Specifically, the preliminary high-level

facilities analysis and the decision to initially build at least two new academic buildings and student housing have begun to inform the Subcommittee's decision-making and solidify the basis of the Master Plan.

Preliminary Facilities Improvement Cost Analysis (Attachment): In general, this analysis makes clear on an order of magnitude basis the cost of repairing and upgrading each building at UMass Boston and compares them to each other and to projected replacement costs of each facility. The template that was developed uses metrics, estimated costs, and known failings in building systems (roofs, HVAC, mechanical/electrical, building envelopes, etc.) documented in recently completed engineering studies and reports on the campus' physical plant and assets. The estimated $136 million in construction costs for the complete restoration of the substructure (30-40 year solution) plus other project costs are also allocated and factored into the estimated repair costs of each existing building where appropriate.

Preliminary findings of this analysis reveal that for many of the University's facilities the repair costs come close to or in some cases exceed the cost to construct new buildings. The picture that is emerging illustrates that UMass Boston is beyond the norm of other college campuses in the number of its facilities that have reached or are approaching the end of their useful life. The University's needs are clearly more profound than peer campuses in that most of its facilities are at this stage simultaneously.

As a result, unlike other schools, it is imperative that a comprehensive approach to solving the needs of the University's physical assets be devised and implemented for the long-term health of the campus on which the University depends.

New Academic Building: One of the primary strategic priorities of the University is to grow and retain its student enrollment and accordingly, strengthen the financial footing of UMass Boston. Based on an enrollment goal of 15,000 students by 2010 and using industry standards, Chan Krieger has projected a deficit of approximately 500,000 square feet of academic space, helping to affirm the need for a new academic building.

In addition, it is widely recognized that the physical condition of the University's teaching space significantly hinders the pedagogical methods and learning experience of faculty and students. As the traditional lecture-style of teaching is currently being replaced with seminar discussions, and a more open exchange of information between teachers and students, UMass Boston faculty and students are at a disadvantage due to the outdated design of the classrooms.

Moreover, the condition of the University's academic space is hindering its ability to cultivate its academic programs and priorities in an effort to remain competitive

in the academic marketplace and elevate its stature as a first-class public university.

Accordingly the Strategic Planning Task Force has reached consensus on the need for a new academic building to accommodate an increase in the student population and enhance the learning and teaching environment for students and faculty.

New Academic Building: Based on preliminary findings of the facilities improvement costs analysis, it may be more financially prudent to construct a second academic building in the earlier stages of the Master Plan, rather than invest in the repair and upgrade of an existing campus building that has reached the end of its useful life. A second new building will also be needed to serve as swing space as existing buildings are vacated to accommodate facility renovation that is deemed appropriate.

Student Housing: The need for new student housing has been affirmed by the Strategic Planning Task Force and will likely emerge as a primary strategic objective in the University's final Strategic Plan as a key vehicle for retaining and growing student enrollment. What has come out of the study of this issue by the Student Life Subcommittee is that of the top 30 competitors to UMass Boston, all have residence halls on campus. These are the colleges and universities where prospective UMass Boston students also apply. The leadership of UMass Boston has come to understand that student housing is necessary if the University is to stay competitive with these institutions and retain and increase its student population.

Moreover, it has become widely recognized by the University's leadership that if UMass Boston is going to attract and retain students that the lack of student life on the campus needs to be addressed. Student housing can help enliven the campus and enhance the student culture that prospective students look for in a school. It can also provide greater connections between students that serve to enhance the learning experience.

Guiding Principles & Other Considerations

The Subcommittee has begun to establish guiding principles to help in its decision-making on the broad framework and specific components of the Master Plan. This is an initial list which will be expanded as the work of the Subcommittee moves forward.

Pursuit of urban mission: From its founding in 1964, UMass Boston was defined as a University with an "urban mission" whose teaching, research and service programs will serve the local public and promote community engagement. For the Master Plan, particular attention will be paid to the site location and design of facilities in support of academic priorities that seek to advance UMass Boston's urban mission. In addition, collaborative strategies will be considered that

cultivate partnerships with the community and integrate campus plans with those of the larger community.

Student life: In recognition of the need to improve student life at UMass Boston, the Master Plan will focus on re-conceptualizing space to meet the specific needs of both commuting and resident students (i.e. accessibility of information, social and cultural events, dining, rest and comfort, intercollegiate athletics, recreation, physical fitness & wellness) and determine how it can support the enhancement of the student experience at UMass Boston.

Green/sustainable facilities: The University's strong commitment to environmental sustainability will be integral to the Master Plan. Sustainable site development, use of energy efficient alternatives, and the use of recyclable and locally available materials will be prioritized in this process.

Durability & flexibility of space: Given the environmental conditions of the campus, durability of facilities is an important design standard for future buildings. Moreover, the need to maximize the versatility of space must be considered in the design of academic buildings that will enable space to be reconfigured over time without major structural modifications, while providing an inviting teaching and learning environment for students and faculty.

Integration of space functions: New and renovated academic facilities should house a mix of academic programs so as to help support interdisciplinary instruction and research at UMass Boston. Under this concept, non-academic and co-curricula activities regarding student life and other social activities, would also reside in academic facilities as one method of helping to meet student needs and concerns.

Use of ground level space: In an effort to help enliven campus life and provide an asset to the larger community, campus buildings should accommodate non-academic functions such as retail, recreation, physical fitness & wellness, and public safety.

Incorporation with the natural surroundings: The future campus design and orientation should take full advantage of the natural beauty of Columbia Point and sensibly integrate the physical plant with the waterfront.

Integration with the surrounding community: Through the rebuilding of the campus options exist to strengthen, in a respectful manner, the University's physical connection with its neighbors, including the JFK Library and Commonwealth of Massachusetts Archives, and enhance its place in the neighborhood as an accessible public area.

As described below, the Subcommittee is also mindful that ongoing discussions and initiatives occurring outside of the master planning process will likely influence and help shape the design of the future campus.

Viability of shared spaces: While UMass Boston shares Columbia Point with other public and private entities, in many ways it exists as an island in that it has not yet cultivated as many formal business, cultural, or communal relationships with its neighbors as it could. In this context, not only is there an opportunity, for example, to improve the connection of the JFK Library and State Archives with the campus, but to develop mutually beneficial programs as well. In addition, as it has been discussed previously, collaboration between the Mt. Vernon Street neighbors, the City of Boston, and the University can help to improve the streetscape and commercial foundation of Mt. Vernon Street as a gateway to the harbor and a means of strengthening community connections.

Safety planning: The safety and security of all UMass Boston students, faculty, and staff is a top priority of the University administration. An internal committee representing all stakeholders and relevant departments is currently studying best practices and other institutional models in an effort to develop recommendations for addressing and improving safety concerns and issues on the campus. The results of this effort will have a direct effect on campus and facility design considerations.

Conceptual Approaches to Campus Orientation

The decision to pursue a 7-10 year interim solution for the campus substructure presents enormous opportunities for UMass Boston as it works to develop a long-term Master Plan. The University has the chance to eliminate the existing fortress-like nature of its physical plant and take better advantage of its waterfront location, improve access to the campus, provide more open space, and better connect with its surrounding neighbors and urban community.

The Master Plan Subcommittee has begun to study different conceptual approaches to organizing and orienting the campus. These include models based on the following modes of organization:

- Network of Quads
- Central Spine
- Town Square

Network of Quads: This model represents the traditional style of college architecture where clusters of buildings fully or partially surround open space (e.g., Oxford University).

Central Spine: Under this approach, a central building or corridor is used to interconnect buildings on campus where the “central spine” could accommodate social, academic, and circulatory space (e.g., MIT).

Town Square: The idea of a town square seeks to bring together different functions and groups at centers of activity. It supports and stimulates community and engages its surroundings (e.g., Copley Square).

Each of the above three design elements can play a significant role towards creating a new campus for UMass Boston. Firstly, new quadrangles, courtyards, and promenades would enhance and reinforce the relationship between buildings and provide an attractive and sustainable environment for campus activity.

Secondly, strengthening the interconnectivity between campus buildings through an improved pedestrian circulation system would help clarify wayfinding and improve opportunities for academic, functional, and social interactions across the entire campus.

Thirdly, the incorporation of a major campus space would help establish a place of identity for the campus and enhance the sense of campus life and community.

Each of the above design elements has merit on any campus. As the exploration and analyses of alternative campus plans proceed, the campus planning team will consider and incorporate each of the above elements in various degrees to find the ideal combination that would best fit the culture of the UMass Boston campus, complement its extraordinary surroundings, and maximize the availability of resources to implement a new campus plan.

Master Plan Implementation: A 20-25 year Timeframe

It is becoming explicitly clear to the Subcommittee that the potentially extensive and profound scope of the final Master Plan will require UMass Boston to move in an incremental and phased fashion over a 20-25 year timeframe. This will allow the University to minimize disruption to campus operations and proceed in a fiscally responsible manner as capital debt, both for UMass Boston and the Commonwealth of Massachusetts, is spread out over time.

The following sample or option (Option A) illustrates what a possible phased implementation plan would look like and is intended to generate discussion on the formulation of a final plan. Certainly this represents one of many options that could be considered in the context of strategic priorities, debt service implications, and operational considerations.

Phase I: Under this initial phase, the highest strategic priorities would be addressed.

- construction of two new academic buildings
- creation of new student housing – 1,000 beds
- relocation of the utilities backbone in preparation for taking down the plaza and the upper and lower parking levels)
- begin modifications to the circulation and open space network towards implementation of a new campus plan

Phase II: The University would continue to pursue its long-term strategic goals and objectives.

- creation of another 1,000 beds, for a total of 2,000 beds
- construction of new athletic facilities to replace existing ones which must be relocated
- building of structured parking - (1,000-1,500 spaces)
- renovation and/or construction of additional academic building(s)
- dismantle substructure in phases
- continue modifications to the circulation and open space network towards implementation of a new campus plan

Phase III: The last elements of the Master Plan would be implemented in this phase.

- renovation and/or construction of academic building(s)
- building of other needed structured parking
- complete modifications to the circulation and open space network towards implementation of a new campus plan

Next Steps & Future Actions

While the work of the other Subcommittees concludes with the submission of its final reports in May 2007, the Master Plan Subcommittee will continue its work through the summer and fall with the goal of presenting the final, high-level Master Plan to the Board of Trustees in December 2007.

The following steps will be taken in order to fulfill this schedule:

- Development of Alternative Campus Plan Scenarios (Options B, C, D) – Spring/Summer 2007
- Development of the Preferred Campus Plan – Summer/Fall 2007
- Public presentation of Preferred Plan – Fall 2007
- Finalization of Preferred Plan – November 2007
- Presentation of final Master Plan to Board of Trustees – December 2007
- Detailed development of Master Plan – January 2008 and beyond
- Public presentation of detailed Master Plan – subsequent to completion of detailed plan

To supplement the efforts of the Subcommittee, two work groups have recently been formed to study and make recommendations on the design of two new academic buildings and campus housing.

Academic Buildings: This group will identify what departments and the mix of departments will move into the first building(s); research recent trends in academic facility design; and explore campus location scenarios and implications for optimizing teaching.

Campus Housing: This group will survey other campuses and identify successful models of campus housing; identify costs and financial feasibility implications; and explore options for the number of buildings needed, floors per building, and site adjacencies.

In sum, after months of studying issues and conditions of the current campus, the Master Plan Subcommittee is now at a point where it can begin to formulate its recommendations for the future re-design of UMass Boston. The Subcommittee's goal is to create a more welcoming, purposeful and functional campus that is better integrated with its neighbors and surroundings, and better meets the needs of its students, faculty, and staff.

UMASS BOSTON MASTER PLAN — **CKS**

IMPROVEMENT COSTS ANALYSIS — **PRELIMINARY** — 5/16/07

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	**Improvement**	**Source**	**Campus Center**	**Clark & Pool**	**Healey**	**McCormack**	**Power Plant**	**Pump House**	**Quinn**	**Service & Supply**	**Science**	**Wheatley**	**SUBTOTALS**	**Substructure Repair (SGH 2006)**	**Substructure Outside Bldgs**	**Substructure Under Bldgs**	**Substructure Under Bldgs w/o CamCen**	**TOTALS**
B	**FACILITY DATA**																	
C	Occupancy Date	UMB	Apr 03	Aug 77	Sep 73	Sep 73	Jun 72	1973	Dec 72	1973	Sep 73	Sep 73		1979				
D	Building Footprint	CAD measured	58,275	92,945	33,765	72,710	27,866	3,685	26,130	17,690	71,130	64,310	**468,506**	410,500	**144,075**	266,425	208,150	**612,581**
E	Gross Square Feet	Gilbane 2005 Report	382,670	119,144	283,872	287,560	65,200	4,314	97,023	86,488	296,716	286,196	**1,909,183**	821,000	**288,150**	532,850	416,300	**2,197,333**
F	**INTERIM REPAIR COSTS**																	
G	Interim Substructure Stabilization Construction Cost	SGH 2006 Study					3,200,000							16,500,000				19,700,000
H	Interim Substructure Stabilization Project Cost	G x 1.5 x 1.06 (2007$)					5,088,000							**26,235,000**				**31,323,000**
I	Interim Use of Substructure Under Bldgs	D x 2 x $50/sf x 1.5				10,906,500					10,669,500	9,646,500						**31,222,500**
J	**TOTAL COMMON COSTS**					**10,906,500**	**5,088,000**				**10,669,500**	**9,646,500**		**26,235,000**				**62,545,500**
K	**REPLACEMENT COSTS**																	
L	Replacement Building Construction Cost	Gilbane 2005 Report	101,750,000	47,979,047	167,035,770	115,237,238	39,110,115	9,780,172	36,006,425	23,291,483	191,732,112	116,298,827	848,221,187	**136,000,000**	55,629,782		80,370,218	
M	Construction Cost/SF	calculated	266	403	588	401	600	2,267	371	269	**646**	406	444	193	193		193	
N	Replacement Building Project Cost (2007$)	L x 1.5 x 1.12 (or 1.06)	170,940,000	80,604,798	280,620,094	**193,598,559**	65,704,993	16,430,689	60,490,793	39,129,691	**322,109,948**	**195,382,029**	1,425,011,593	**216,240,000**	88,451,354		127,788,646	
O	Project Cost/SF	calculated	447	677	989	673	1,008	3,809	623	452	1,086	683	746	307	307		307	
P	Demolition of Existing Bldg Costs	E x $15/sf	5,740,050	1,787,160	4,258,080	4,313,400	978,000	64,710	1,455,345	1,297,320	4,450,740	4,292,940	28,637,745	**10,566,750**	**4,322,250**		**6,244,500**	**10,566,750**
Q	Replacement Garage (1600 cars @ $40K each)	1998 Columbia Pt Study				26,125,119					26,956,951	26,001,198	79,083,268	**105,261,989**	**26,178,721**		**79,083,268**	**105,261,989**
R	New Landscape @ plaza areas ($10/sf)	apportioned plaza area				503,276					492,340	445,134	1,440,750					
S	New Landscape @ former building site ($10/sf)	per building site				727,100					711,300	643,100	2,081,500					
T	New Replacement Infrastructure Utility Loop	$25M									4,331,912		4,331,912	**25,000,000**	**20,668,088**		**4,331,912**	**25,000,000**
U	**TOTAL REPLACEMENT COSTS (GILBANE)**		**176,680,050**	**82,391,958**	**284,878,174**	**225,267,454**	**66,682,993**	**16,495,399**	**61,946,138**	**40,427,011**	**359,053,191**	**226,764,401**	**1,540,586,768**	**357,068,739**	**139,620,412**		**217,448,327**	**357,068,739**
V	**RENOVATION COSTS (GILBANE)**																	
W	Renovation Construction Costs	Gilbane 2005 Report	692,495	21,742,753	16,234,483	29,762,359	4,723,190	5,000,733	13,009,395	8,879,986	27,594,480	23,830,759	151,470,633	136,000,000				
X	**GILBANE RENOVATION PROJECT COSTS (2007$)**	W x 1.5 x 1.12 (or 1.06)	**1,163,392**	**36,527,825**	**27,273,931**	**50,000,763**	**7,934,959**	**8,401,231**	**21,855,784**	**14,918,376**	**46,358,726**	**40,035,675**	**254,470,663**	**216,240,000**				**470,710,663**
Y	Renovation Cost/SF	X / E	3	307	96	174	122	1,947	225	172	**156**	140						
Z	**RENOVATION COSTS (UMB FACILITIES)**																	
AA	Other Renovations Project Costs	Facilities Dept (2007$)	0	5,131,000	10,821,430	48,436,409	876,000		18,228,871	11,273,576	49,784,761	44,016,454	188,568,501					
BB	Selective Demolition (5% of upgrade)	(X + AA) x 5%	58,170	2,082,941	1,904,768	4,921,859	440,548		2,004,233	1,309,598	4,807,174	4,202,606	21,731,897					
CC	**TOTAL OTHER RENOVATION COSTS**	Z + AA	**58,170**	**7,213,941**	**12,726,198**	**53,358,267**	**1,316,548**	**0**	**20,233,104**	**12,583,174**	**54,591,936**	**48,219,060**	**210,300,398**					**210,300,398**
DD	Renovation Cost/SF	CC / E	0.15	61	45	186	20	(completed)	209	145	184	168	110					
EE	**APPORTIONED SUBSTRUCTURE COSTS**																	
FF	Substructure Repairs Under Buildings	apportioned U17				75,958,049					74,307,468	67,182,810	217,448,327					
GG	Demolition of Substructure	apportioned P17				2,181,300					2,133,900	1,929,300	6,244,500					
HH	New Landscape @ plaza areas ($10/sf)	apportioned plaza area				503,276					492,340	445,134	1,440,750					
II	New Landscape @ former building site ($10/sf)	per building site				727,100					711,300	643,100	2,081,500					
JJ	Replacement Garage (1600 cars @ $40K each)	per building site				26,125,119					26,956,951	26,001,198	**79,083,268**		**26,178,721**			**105,261,989**
KK	New Replacement Infrastructure Utility Loop ($25M)	only A11 is on top of it									25,000,000		25,000,000					
LL	**SUBSTRUCTURE DEMO UNDER BLDGS COSTS**	sum FF thru KK				**105,494,844**					**129,601,959**	**96,201,542**	**331,298,344**		**26,178,721**			**357,477,065**
MM	Project Cost/SF	LL / E				367					437	336			91			
NN	**ADAPTIVE REUSE COSTS**																	
OO	Substructure Reuse Project Costs	D x 2fl x O			66,756,408	97,903,403					154,435,087	87,807,085	406,901,982					
PP	Selective Demolition & Finishes for Atria	10,000 ft x 4fl x O			39,541,778	26,929,832					43,423,334	27,307,444	137,202,388					
QQ	**TOTAL ADAPTIVE REUSE COSTS**				**106,298,186**	**124,833,234**					**197,858,421**	**115,114,529**	**544,104,370**					**544,104,370**
RR	**FAÇADE RENOVATION OR REPLACEMENT**																	
SS	Building Perimeter Linear Feet	measured		1,955	735	1,600		260	780		1,160	1,225						
TT	Building Height in Floors	measured		3	11	4		1	3		4	6						
UU	Building Height in Feet	measured		44	161	59		15	44		59	88						
VV	Façade Surface Area	SS x UU		86,040	118,607	93,888		3,900	34,328		68,069	107,825						
WW	**FAÇADE REPLACEMENT PROJECT COSTS**	VV x $100 x 1.5		**12,905,933**	**17,791,043**	**14,083,200**		**585,000**	**5,149,170**		**10,210,320**	**16,173,675**	**76,898,340**					**76,898,340**
XX	Façade Replacement Cost/sf	WW / VV		150	150	150		150	150		150	150						
YY	**TOTAL RENOVATION COSTS (PER GILBANE)**	X + CC + LL + QQ + WW	**1,221,561**	**56,647,699**	**164,089,358**	**347,770,308**	**9,251,507**	**8,986,231**	**47,238,058**	**27,501,550**	**438,621,361**	**315,744,481**	**1,417,072,115**					**1,659,490,836**
ZZ	**% of Replacement Cost**	ZZ / U	**0.7%**	**68.8%**	**57.6%**	**154.4%**	**13.9%**	**54.5%**	**76.3%**	**68.0%**	**122.2%**	**139.2%**						