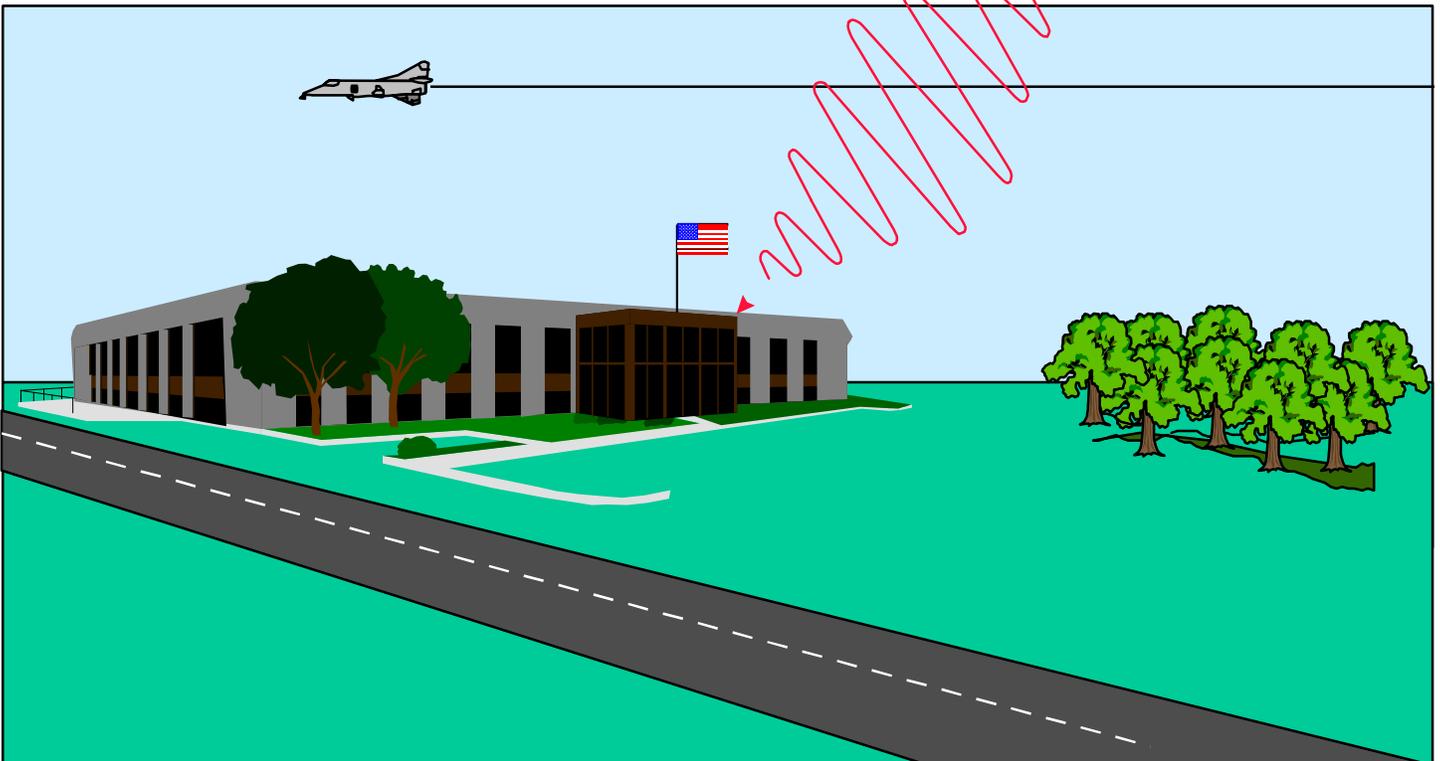
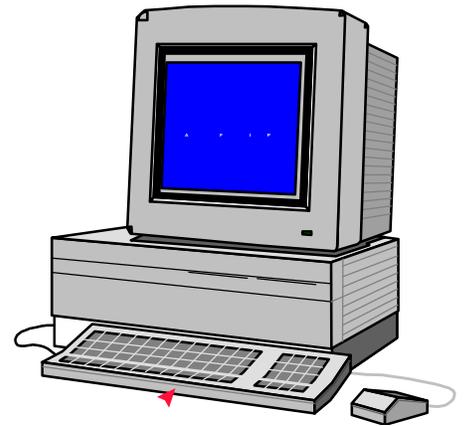




Directorate of the Command Civil Engineer

Infrastructure Condition Standards



NOVEMBER 1997

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INTRODUCTION

The Air Force Material Command developed a facility infrastructure program to provide a comprehensive investment plan which corrects facility deficiencies and improves the reliability of the total infrastructure. The objective of this management process is to provide adequate funding which will systematically improve performance and maintain the of the infrastructure at the preventive maintenance level. All elements are divided into five systems: (A) Building System, (B) Utility System, (C) Pavements and Grounds System, (D) Airfield System, and (S) Water and Wastewater System. In order to determine the required investment, it is necessary to determine the current condition of each element within a system and then determine how this condition impacts the performance of that element and all related elements. The investment required to upgrade the system to an acceptable level can then be calculated.

The effectiveness of this process is dependent upon an accurate and uniform evaluation procedure for determining the condition of each element and the ability to extend this evaluation to the overall system. A scale of 0 to 10 was accepted as an appropriate range for quantifying a condition rating. On this rating scale, the 0 was defined as the complete failure mode and the 10 was defined as new condition requiring only future preventive maintenance. The 9 was defined as the preventive maintenance mode for each element.

One of the more difficult problems with any evaluation process is applying a generic scale to a specific situation. The process is further complicated because few, if any, projects or systems are composed of a single element. Most are a combination of several elements. The condition rating is a technical evaluation of each element and is subject to the individual interpretation of the evaluating engineer or technician. Because few projects or systems are composed of a single element, the weighting of how each element interacts with the total is also open to interpretation. If no further guidance were provided, the condition rating would be open to individual interpretations and not comparable with the rating of other projects, systems, or bases. The AFMC Command Civil Engineer organized an integrated product team (IPT) to establish more positive guidance to make this process more uniform and accurate. The members of this IPT consisted of Air Force Reserve Individual Mobility Augmentees (IMA). These professionals were eminently qualified for this assignment because they have acquired vast technical experience in both their civilian and military occupations. Their efforts produced a standard criteria as a guide to provide a standardized condition rating for both projects and systems.

This guide is divided into the same five systems established in the AFMC infrastructure program. To promote uniformity, each system is further divided into components and each component is divided into sub-components. This reduces the rating process down to individual elements which make up each project or system. Each sub-component has a written description of the condition associated with the 0, 2, 4, 6, 8, and 10 ratings. The descriptions for the 1, 3, 5, 7, and 9 ratings are not specifically defined but can be interpolated between the two given descriptions. Each sub-component is given a weighting factor to assist in developing an aggregate rating for each project or system. The system for a complex project is determined by which system has the highest weight.

HOW TO USE THESE STANDARDS

The Infrastructure Condition Standards (ICS) are checklists which establish detailed rating criteria for evaluating the physical condition of the components and sub-components of each of the five infrastructure systems. These standards also provide weighting for comparing the importance of each component and sub-component within that system. This criteria can be used to rate all sub-components which are associated with a project and then derive its condition rating based on a 0 - 10 scale. The following are several examples on how to use these standards in determining the condition rating for projects and systems.

EXAMPLE 1: The easiest to understand is a project which contains one sub-component under one component within one infrastructure system. Repairing the roof on building 30123 can illustrate this procedure. Building 30123 has a deteriorated roof. An inspection reveals that some major cracking is evident in the roof membrane and there is standing water after a brief shower. A further look at the underside of the roof shows leakage; however, there is no structural damage and there is no evidence that any of the underlying material has deteriorated. A project is developed to repair the roof on building 30123. Looking under "**BUILDING SYSTEM**", we find the component "FOUNDATIONS & STRUCTURAL" and sub-component "Built-Up Roofing" on page A-6 of the ICS. The description under the "*Serious Defects*" best describes the existing condition of our example roof, giving a condition rating of "4". This is the only work item in the project; therefore, the condition rating for the project is the same as the condition rating for the sub-component; i.e., "4".

EXAMPLE 2:

The next level of complexity is a project which contains several sub-components under one component within one infrastructure system. We will use the same factors brought out in example 1 except in this case the inspection of building 30123 reveals that in addition to the major cracking and standing water, the leakage has created some structural damage. A project is developed to repair the roof and the insulation. Again, looking at page A-6 of the ICS, we find the sub-component "Built-Up Roofing". This condition appears to be more severe than in the previous example because of the structural damage. The condition rating for this sub-component would be "2" for "*Excessive Defects*". It was also determine that the underlying structure was damaged with some splitting visible and could be corrected without any major reconstruction. The structure is a different sub-component, "Horizontal Structural Elements" under the same component. The actual condition of the structure is consistent with a rating of "6" as described on page A-5.

Combining two sub-components, with two different ratings, into one project condition rating is accomplished by using component weights found on the first page of each infrastructure system standard. In this example, we are using the infrastructure system, "**BUILDING SYSTEM**" and the component weights are found on page A - 1. The contributing weight of "Built-Up Roofing" is 4.3% and the contributing weight of "Horizontal Structural Elements" is 5.9%. The summation of these two weights is, 10.2%, which becomes the total weight of the project. To determine the contribution of each sub-component to the condition of the project, multiply the rating of the sub-component by its weighting and then divide the product by the total weight of the project. In this case, the "Built-Up Roofing" would be $(2 \times 4.3\%) / 10.2\%$ for a contributing factor of 0.84. The "Horizontal Structural Elements" sub-component would have a contributing factor of 3.47, (6

HOW TO USE THESE STANDARDS

x 5.9%)/10.2%. The summation of these factors (4.31), rounded to nearest integer, would provide a project rating of "4".

EXAMPLE 3:

The rating of all projects, regardless of complexity, follows the same procedures established in the first two examples; however, when more than one component is involved the component weight will be used in the process. In short, sub-component ratings are used to determine component ratings and component ratings are used to determine project ratings. The process is illustrated in this example.

Using the following description and the procedures described in example 2, we can evaluate a project to repair "G" Street. "G" Street is an asphalt street which has alligator cracking over 20% of its surface and has several "pot-holes" which have required maintenance, twice during the past year (Condition rating 4). This street has concrete Curbs & Gutter on both sides which are in good shape, needing only the joints sealed to prevent infiltration of surface water as a preventive maintenance item and requiring repairs (Condition rating 9). The concrete sidewalk along "G" Street has several deteriorated areas and requires replacement of 10% of the slabs (Condition rating 6). The catch basins and piping have minor leaks but experience some capacity problems during heavy rain fall (Condition rating 6).

Using this data, we can calculate the condition rating for the project by using the sub-component ratings to calculate component ratings and then using these component ratings to calculate the project rating.

COMPONENT Sub-Component	Weight	x	Condition Rating	/	Component Total Weight	=	Contributing Factor	Component Rating
PAVEMENTS								4.91
Roads and Streets	22.8%	x	4	/	27.9%	=	3.27	
Curbs & Gutters and Approaches	5.1%	x	9	/	27.9%	=	1.65	
Component Totals	27.9%						4.91	
GROUNDS								6.00
Sidewalks, Structures and Misc. Pads	5.2%	x	6	/	11.3%	=	2.76	
Inlets, Manholes, Catch Basins & Piping	6.1%	x	6	/	11.3%	=	3.24	
Component Totals	11.3%						6.00	



COMPONENT Sub-Component	Weight	x	Condition Rating	/	Project Weight	=	Contributing Factor
PAVEMENTS	71.7%	x	4.91	/	100.0%	=	3.52
GROUNDS	28.3%	x	6.00	/	100.0%	=	1.70
Project Totals	100.0%						5.22

Project Condition Rating

5

The total of 5.22 is then rounded to the nearest integer to produce a project condition rating of "5". The system designation for this project is "C" for **PAVEMENTS AND**

HOW TO USE THESE STANDARDS

GROUND SYSTEM, because 100% of the component weight of this project is associated with that infrastructure system.

EXAMPLE 4:

The procedures established in example 3 can be used to calculate the condition rating for an individual building (or other base facility). This follows the same process: evaluate the sub-components within a building and assign condition; calculate the condition rating for each component based on the sub-component rating; and calculate the building's condition from its component ratings. The following is a table illustrating this procedure:

BUILDING 30125

Sub-Component	COMPONENT	Condition Rating
Foundation	FOUNDATIONS & STRUCTURAL	7
Vertical Structural Elements	FOUNDATIONS & STRUCTURAL	6
Horizontal Structural Elements	FOUNDATIONS & STRUCTURAL	6
Built-Up Roofing	FOUNDATIONS & STRUCTURAL	4
Windows and Exterior Doors	ARCHITECTURAL	6
Exterior Walls	ARCHITECTURAL	6
Insulation	ARCHITECTURAL	7
Interior Walls	ARCHITECTURAL	6
Floors	ARCHITECTURAL	5
Ceiling	ARCHITECTURAL	5
Doors and Trim	ARCHITECTURAL	6
Systems Furniture	SPECIALTY ITEMS	9
Air Handlers	HEATING, VENTILATION & AIR CONDITIONING	4
Exhausters/Ventilators	HEATING, VENTILATION & AIR CONDITIONING	3
HVAC Controls	HEATING, VENTILATION & AIR CONDITIONING	3
Ductwork & Accessories	HEATING, VENTILATION & AIR CONDITIONING	5
Interior Wiring and Circuit Breakers	ELECTRICAL	6
Interior/Exterior Lighting	ELECTRICAL	7
Energy Management and Controls	ELECTRICAL	8
Natural Gas Piping	PLUMBING	7
Water and Sanitary Sewer Piping	PLUMBING	6
Regulators and Valves	PLUMBING	7
Fixtures	PLUMBING	7
Water Heaters	PLUMBING	9
Mechanical Items	MECHANICAL	7
Sprinklers	FIRE SUPPRESSION	5
Fire Alarm Panels	FIRE SUPPRESSION	6
Detectors	FIRE SUPPRESSION	5
Pull Stations	FIRE SUPPRESSION	7

Use the weightings established in this standard to calculate the condition rating for each component within the building.

HOW TO USE THESE STANDARDS

COMPONENT Sub-Component	Weight	x	Condition Rating	/	Component Total Weight	=	Contributing Factor	Component Rating
FOUNDATIONS & STRUCTURAL								5.89
Foundations	5.8%	x	7	/	25.9%	=	1.57	
Vertical Structural Elements	9.9%	x	6	/	25.9%	=	2.29	
Horizontal Structural Elements	5.9%	x	6	/	25.9%	=	1.37	
Built-Up Roofing	4.3%	x	4	/	25.9%	=	0.66	
Component Totals	25.9%						5.89	
ARCHITECTURAL								5.95
Windows and Exterior Doors	3.4%	x	6	/	29.3%	=	0.70	
Exterior Walls	14.9%	x	6	/	29.3%	=	3.05	
Insulation	0.2%	x	7	/	29.3%	=	0.05	
Interior Walls	7.8%	x	6	/	29.3%	=	1.60	
Floors	0.9%	x	5	/	29.3%	=	0.15	
Ceiling	1.0%	x	5	/	29.3%	=	0.17	
Doors and Trim	1.1%	x	6	/	29.3%	=	0.23	
Component Totals	29.3%						5.95	
SPECIALTIES								9.00
Systems Furniture	0.5%	x	9	/	0.5%	=	9.00	
HEATING, VENTILATION & AIR CONDITIONING								4.37
Air Handlers	4.3%	x	4	/	9.7%	=	1.77	
Exhausters/Ventilators	0.3%	x	3	/	9.7%	=	0.09	
HVAC Controls	0.6%	x	3	/	9.7%	=	0.19	
Ductwork & Accessories	4.5%	x	5	/	9.7%	=	2.32	
Component Totals	9.7%						4.37	
ELECTRICAL								6.17
Interior Wiring and Circuit Breakers	5.0%	x	6	/	5.8%	=	5.17	
Interior/Exterior Lighting	0.6%	x	7	/	5.8%	=	0.72	
Energy Management and Controls	0.2%	x	8	/	5.8%	=	0.28	
Component Totals	5.8%						6.17	
PLUMBING								6.97
Natural Gas Piping	0.5%	x	7	/	2.6%	=	1.35	
Water and Sanitary Sewer Piping	0.7%	x	6	/	2.6%	=	1.62	
Regulators and Valves	0.2%	x	7	/	2.6%	=	0.54	
Fixtures	0.9%	x	7	/	2.6%	=	2.42	
Water Heaters	0.3%	x	9	/	2.6%	=	1.04	
Component Totals	2.6%						6.97	
MECHANICAL								7.00
Mechanical Items	1.4%	x	7	/	1.4%	=	7.00	
FIRE SUPPRESSION								5.26
Sprinklers	1.0%	x	5	/	1.6%	=	3.13	
Fire Alarm Panels	0.2%	x	6	/	1.6%	=	0.75	
Detectors	0.3%	x	5	/	1.6%	=	0.94	
Pull Stations	0.1%	x	7	/	1.6%	=	0.44	
Component Totals	1.6%						5.26	

COMPONENT	Weight	x	Condition Rating	/	Project Weight	=	Contributing Factor
FOUNDATIONS & STRUCTURAL	29.8%	x	5.89	/	100.0%	=	1.76
ARCHITECTURAL	29.3%	x	5.95	/	100.0%	=	1.74
SPECIALTIES	1.0%	x	9.00	/	100.0%	=	0.09
HEATING, VENTILATION & A/C	16.5%	x	4.37	/	100.0%	=	0.72
ELECTRICAL	11.6%	x	6.17	/	100.0%	=	0.72
PLUMBING	3.5%	x	6.97	/	100.0%	=	0.24
MECHANICAL	4.2%	x	7.00	/	100.0%	=	0.29
FIRE SUPPRESSION	4.1%	x	5.26	/	100.0%	=	0.22
System Totals	100.0%						5.78

Building Condition Rating

5.8

HOW TO USE THESE STANDARDS

The calculated system rating is the weighted summation of the condition rating of all the component ratings rounded to the nearest tenth.

EXAMPLE 5:

The procedures established in example 3 and a statistically valid sampling of the sub-components in any infrastructure system, can be used to calculate the condition rating for an infrastructure system. For rating infrastructure systems, a "*statistically valid sampling*" is defined as a feature (or features) whose condition rating(s) has a 90% probability of representing the overall condition rating for the associated sub-component.

This is a three step process. First is to determine the features and their condition rating which best describes the listed sub-components. Second is to calculate the condition rating for each component as described in example 3. Third is to calculate the system's condition from the component ratings.

The following is a table illustrating the first step. It shows features from an Air Force base which were selected and rated by the base's civil, pavements and traffic engineers and roads and ground technicians, to represent the **PAVEMENTS AND GROUNDS SYSTEM**. The condition ratings for each of these features represent the overall condition rating for the associated sub-components.

PAVEMENTS AND GROUNDS SYSTEM

Feature	Sub-Component	COMPONENT	Condition Rating
Hanscom Street	Roads/Streets	PAVEMENTS	4
Parking Lot 6A	Parking Lots	PAVEMENTS	6
Headquarters Area	Driveways	PAVEMENTS	6
Robins Avenue	Curbs & Gutters, and Approaches	PAVEMENTS	6
McClellan Road	Culverts and Bridges	PAVEMENTS	8
Arnold Street	Signal Lights	PAVEMENTS	8
Eglin Road	Signs	PAVEMENTS	6
Hanscom Street	Street and Parking Lighting	PAVEMENTS	6
Headquarters Area	Site Work	GROUNDS	9
Headquarters Area	Landscaping	GROUNDS	7
Headquarters Area	Area Lighting	GROUNDS	6
Area B	Fencing	GROUNDS	6
Area B	Sidewalks, Structures, Miscellaneous Pads	GROUNDS	6
Industrial Area	Drainage Ditches & Canals	GROUNDS	4
Industrial Area	Inlets, Manholes, Catch Basins and Piping	GROUNDS	3
No Feature	Railroads	GROUNDS	n/a

The second step is to multiply the rating of each sub-component by the established weighting. We can then calculate the condition rating for the system based on this weighted summation of each of the sub-components or components contribution

HOW TO USE THESE STANDARDS

PAVEMENTS AND GROUNDS SYSTEM

COMPONENT Sub-Component	Weight	x	Condition Rating	/	Component Total Weight	=	Contributing Factor	Component Rating
PAVEMENTS								5.67
Roads and Streets	22.8%	x	4	/	71.7%	=	1.27	
Parking Lots	18.9%	x	6	/	71.7%	=	1.58	
Driveways	3.2%	x	6	/	71.7%	=	0.27	
Curbs & Gutters, and Approaches	5.1%	x	6	/	71.7%	=	0.43	
Culverts and Bridges	6.3%	x	8	/	71.7%	=	0.70	
Signal Lights	4.7%	x	8	/	71.7%	=	0.52	
Signs	7.6%	x	6	/	71.7%	=	0.64	
Street and Parking Lot Lighting	3.1%	x	6	/	71.7%	=	0.26	
Component Totals	71.7%					5.67		
GROUNDS								5.86
Site Work	5.2%	x	9	/	26.9%	=	1.74	
Landscaping	1.6%	x	7	/	26.9%	=	0.42	
Area Lighting	1.1%	x	6	/	26.9%	=	0.25	
Fencing	6.4%	x	6	/	26.9%	=	1.43	
Sidewalks, Structures and Misc Pads	5.2%	x	6	/	26.9%	=	1.16	
Drainage Ditches & Canals	1.3%	x	4	/	26.9%	=	0.19	
Inlets, Manholes, Catch Basins & Piping	6.1%	x	3	/	26.9%	=	0.68	
Component Totals	26.9%					5.86		



COMPONENT Sub-Component	Weight	x	Condition Rating	/	Project Weight	=	Contributing Factor
PAVEMENTS	71.7%	x	5.67	/	100.0%	=	4.07
GROUNDS	28.3%	x	5.86	/	100.0%	=	1.66
System Totals	100.0%					5.73	
System Condition Rating							5.7

The calculated system rating is the weighted summation of the condition rating of all the component ratings rounded to the nearest tenth.

BUILDING SYSTEM
(A)

INFRASTRUCTURE CONDITION STANDARD

BUILDING SYSTEM

MAJOR COMPONENTS/ <u>Sub-Components</u>	Component <u>Weight</u>
FOUNDATIONS & STRUCTURAL	29.8%
Foundations	(5.8%)
Vertical Structural Elements	(9.9%)
Horizontal Structural Elements	(5.9%)
Built-Up Roofing	(4.3%)
Shingle Or Metal Roofing	(3.9%)
ARCHITECTURAL	29.3%
Windows And Exterior Doors	(3.4%)
Exterior Walls	(14.9%)
Insulation	(0.2%)
Interior Walls	(7.8%)
Floors	(0.9%)
Ceiling	(1.0%)
Doors And Trim	(1.1%)
SPECIALTY ITEMS	1.0%
Systems Furniture	(0.5%)
Cabinets, Partitions, Mirrors, etc.	(0.2%)
Safety Items	(0.1%)
Security Items	(0.2%)
HEATING, VENTILATION, AND AIR CONDITIONING	16.5%
Air Handlers	(4.3%)
Dedicated Heating/Cooling Units	(5.3%)
Evaporative Coolers	(0.4%)
Exhausters/Ventilators	(0.3%)
Humidifiers/Dehumidifiers	(0.2%)
Heat Recovery/Storage/Exchange	(0.9%)
HVAC Controls	(0.6%)
Ductwork & Accessories	(4.5%)
ELECTRICAL	11.6%
Building Transformers & Switches	(3.6%)
Interior Wiring and Circuit Breakers	(5.0%)
Interior/Exterior Lighting	(0.6%)
Energy Management and Controls	(0.2%)
Generators and Other Backup Power Supply	(2.0%)
Communications	(0.2%)

INFRASTRUCTURE CONDITION STANDARD

INFRASTRUCTURE CONDITION STANDARD

BUILDING SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
PLUMBING	3.5%
Natural Gas Piping	(0.5%)
Liquid Petroleum Piping	(0.3%)
Compressed Air and Other Industrial Gas Piping	(0.4%)
Water and Sanitary Sewer Piping	(0.7%)
Regulators and Valves	(0.2%)
House Pumps	(0.2%)
Fixtures	(0.9%)
Water Heaters	(0.3%)
MECHANICAL	4.2%
Mechanical Items	(1.4%)
Clean Rooms	(1.6%)
Air Pollution	(0.3%)
Water Pollution	(0.3%)
Solar Collectors	(0.2%)
Dedicated Compressed Air	(0.2%)
Elevators and Escalators	(0.1%)
Lifts, Small and Large Hoists, and Cranes	(0.1%)
FIRE SUPPRESSION	4.1%
Sprinkler	(1.0%)
AFFF	(1.1%)
Carbon Dioxide (CO ₂)	(0.9%)
Fire Alarm Panels	(0.2%)
Detectors	(0.3%)
Pull Stations	(0.1%)
HALON	(0.5%)
TOTAL	<hr/> 100.0%

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FOUNDATIONS & STRUCTURAL
Sub-Component: Foundations

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. No settlement or cracking. All foundation elements, including footing, walls and slabs show no sign of distress.
8	Minor Defects	Minor visual cracking or spalling. Cracking walls or slabs is superficial. Slabs and footing are level and walls and columns are plumb.
6	Moderate Defects	Cracking and/or leaking, but no serious structural defects. Minor differential settlement and slab settlement only in localized areas.
4	Serious Defects	Excessive or uneven settlement. Cracking visible through foundation walls. Differential settlement between column footings. Steel reinforcing is exposed in some locations.
2	Excessive Defects	Serious cracking or dangerous sub-soil condition affecting the structural integrity of the building. Differential settlement is significant and effects overall building structure. Steel reinforcing has become exposed in large areas of the foundation.
0	Failed	Foundation is no longer structurally sound.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FOUNDATIONS & STRUCTURAL
Sub-Component: Vertical Structural Elements

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Structural components show no sign of sagging or bowing. Wall treatment shows no structurally related cracking. Windows and doors hang square and operate correctly.
8	Minor Defects	Minor settlement of individual structural members. Wall treatment shows minor cracking related to structural movement which is repairable. Some door and window sticking is noted.
6	Moderate Defects	Settlement of structural members. Wall treatment showing large cracking and falling plaster from settlement. Doors and window frames warped and binding.
4	Serious Defects	Large settlement of structural members and continual cracking of repaired wall surfaces. Doors and windows are stuck and skewed, window glass is cracked in frames. Wall surface repaired render impossible due to structural irregularities.
2	Excessive Defects	Settlement is continuous. Elevation and/or level changes in horizontal members is directly observable. Doors and windows are render totally unusable. Creep is measurable over weekly periods.
0	Failed	Complete failure of the structural members. The degree of creep and/or sagging in areas of the structure render it unusable. Building is deemed unsafe for utilization.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FOUNDATIONS & STRUCTURAL
Sub-Component: Horizontal Structural Elements

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. No deflection noted or apparent.
8	Minor Defects	Some settlement/minor crack noted. Easily corrected. Isolated and confined to a particular area. No permanent damage to building.
6	Moderate Defects	Some cracking/splitting visible. Settlement is pronounced, not isolated. Safety a concern. Correctable without major effort.
4	Serious Defects	Obvious settlement/cracking of element(s) easily visible. Clear/present danger to occupants/users. Extensive effort to repair or correct defects is required. Safety a primary concern.
2	Excessive Defects	Areas/portions of building unusable as intended. Settlement/deflection/damage to element(s) is dramatic. Safety concerns require immediate action to repair elements.
0	Failed	Complete structural failure of elements rendering entire building unsafe and unusable for any purpose.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FOUNDATIONS & STRUCTURAL
Sub-Component: Built-Up Roofing

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Pitch line straight, no sign of sagging at ridge line, with good drainage and no ponding. No plugged roof drains or flashing failures.
8	Minor Defects	Minor membrane cracking on surface with no leakage. Slight sagging in ridge line, minor signs of ponding. Minor roof drains plugged with gravel or leaves.
6	Moderate Defect	Visible cracking or bubbling in surface sealing with no leakage. Sagging at ridge line, ponding or standing water puddles. Some isolated roof drain clogs.
4	Serious Defects	Serious cracking and/or bubbling in surface sealing with visible leakage through roof. Sagging and irregular ridge line, ponding and standing bodies of water. Damage or debris clogged roof drains.
2	Excessive Defects	Large areas of deterioration with severe leakage through roof. Sharp ridge line or rafter pitch line changes and continuous standing water. Spongy or water soaked surface materials with water damage to underlying structure. Roof drains ineffective due to blockages with water remaining on the decking.
0	Failed	Roof does not prevent rain or snow entry. Broken ridge or rafters. Roofing materials are water logged and collapsing.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FOUNDATIONS & STRUCTURAL
Sub-Component: Shingle Or Metal Roofing

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. No separation or cracking of shingles or corrosion of metal. No seam or flashing failures.
8	Minor Defects	Minor corrosion or shingle cracking. Few loose or spreading seams.
6	Moderate Defects	Minor corrosion and small arcing of metal or shingle deterioration. Flashing, sheet, or pan showing signs of deterioration or separation.
4	Serious Defects	Areas of metal corrosion or shingle deterioration allowing leakage through roof. Flashing, sheet, or pan failures with water penetration.
2	Excessive Defects	Large areas of metal corrosion or shingle deterioration allowing leakage through roof. Flashing, sheet, or pan missing with water directly in contact with structural roof system.
0	Failed	Complete failure or penetration of metal or shingles. Roof materials completely missing and water entering the structure.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Windows And Exterior Doors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Windows or doors are functional, meet requirements, need no maintenance or repair.
8	Minor Defects	Some cracked windows. Door hardware requires minor repair or adjustment.
6	Moderate Defects	Some windows or doors are broken or loose. Energy inefficient. Condition detracts from appearance of the building. Potential risk to the security of building.
4	Serious Defects	Windows or doors have no insulating properties. Significant number of windows or doors are broken or inoperable. Definite security risk exists. Emergency egress hardware required or in need of major repair or replacement.
2	Excessive Defects	Windows or doors inadequate for intended function. Does not meet Building/Safety codes. Unable to secure facility. Little or no protection offered from outside elements.
0	Failed	Windows or doors provide no protection. Building is unsafe and is a clear danger to occupants.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Exterior Walls

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Exterior surfaces free of defects and structurally sound. Finishes have no blemishes.
8	Minor Defects	Minor finish defects on wall surfaces requiring cosmetic repairs. Minor caulking required.
6	Moderate Defects	Obvious wall finish defects needing more than cosmetic repairs. Minor weather damage.
4	Serious Defects	Wall surfaces damaged and exposed to the weather. Damage to underlying structural materials. Small holes through wall.
2	Excessive Defects	Visible holes through wall and major areas exposed to the weather. Damage to underlying materials, with materials loose and falling. Potentially unsafe condition.
0	Failed	Large wall surfaces falling off or missing, underlying structural materials completely exposed to and/or damaged by weather. Unsafe to utilize and dangerous to occupant.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Insulation

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. No visible compaction or deterioration.
8	Minor Defects	Minor compaction or consolidation.
6	Moderate Defects	Localized compaction or consolidation with some separation of backing or mounting.
4	Serious Defects	Large areas of compaction or consolidation. Separation of backing or mounting, and fallen insulation.
2	Excessive Defects	Failure of large areas with fallen or missing insulation. Compaction or consolidation degrades insulating properties.
0	Failed	Completely missing, collapsed or otherwise useless insulation material.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Interior Walls

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Surface finishes have no blemishes and the walls are structurally sound.
8	Minor Defects	Minor finish defects appearing on wall surfaces. Repairs can be accomplished by patching.
6	Moderate Defects	Obvious deterioration of wall finishes. Some finish material should be completely replaced. Present wall arrangement is no longer suitable for building use.
4	Serious Defects	Walls are not in compliance with Life Safety Code.
2	Excessive Defects	Interior walls have structural defects creating hazardous conditions.
0	Failed	Interior partitions have deteriorated to a condition where there is eminent danger to human safety.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Floors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Floor surfaces are flat and level.
8	Minor Defects	Carpet or tile have minor staining. Color selection or style no longer match decor.
6	Moderate Defects	Carpet or tile is worn. Wood or concrete floors require refinishing.
4	Serious Defects	Floor surfaces are not flat or level.
2	Excessive Defects	Cracking or spalling of concrete surfaces. Deterioration of sub-flooring or other defects that prevent proper installation of new floor finishes.
0	Failed	Floor surfaces present a hazard to building occupants. Floor is not structurally sound.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Ceiling

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The ceiling is flat and level. All components are properly installed and securely fastened.
8	Minor Defects	Some staining or discoloration of ceiling tile or finish surface. Problem can be corrected with patching or replacement of a few tiles.
6	Moderate Defects	Several ceiling tiles are stained or sagging. Plaster has minor cracking. Ceiling structural system is sound. Ceiling height is inappropriate for present functional use.
4	Serious Defects	Suspension system has deteriorated and ceiling system is no longer flat or level. Plaster is cracking due to subsystem failure.
2	Excessive Defects	Ceiling is not in compliance with Life Safety Code. Tile or plaster has deteriorated to a condition where it must be completely replaced.
0	Failed	Ceiling components are failing down creating a hazard to building occupants. Ceiling system contains loose asbestos.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ARCHITECTURAL
Sub-Component: Doors And Trim

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All door, trim and hardware surfaces are free of blemishes. Doors are hung plumb. Trim is set plumb and level with joints tightly fitted.
8	Minor Defects	Door hardware requires minor adjustment. Doors have minor blemishes that can be easily repaired.
6	Moderate Defects	Door surface have been damaged beyond repair. Door still operates properly.
4	Serious Defects	Door hardware does not operate properly and can not be repaired. Doors have deteriorated beyond repair and do not operate properly.
2	Excessive Defects	Doors do not comply with Life Safety Codes, handicap code, or other applicable code requirements.
0	Failed	Door operation present a clear and eminent hazard to building occupants.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: SPECIALTY ITEMS
Sub-Component: Systems Furniture

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	New systems furniture items.
8	Minor Defects	Minor staining or less than 1% of accessories missing.
6	Moderate Defects	Some drawers are missing and some connections missing.
4	Serious Defects	Panels have damage over 10% of their area, 10% of flipper doors missing and 10% of counter or desk surface has superficial damage.
2	Excessive Defects	More than 50% of panels are mismatched. More than 25% surface damage to the counters or desks. More than 25% of connectors are missing.
0	Failed	System cannot be used as manufactured.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: SPECIALTY ITEMS
Sub-Component: Cabinets, Partitions, Mirrors, etc.

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All finishes are free of defects. All specialty items fully operational.
8	Minor Defects	Cosmetic defects in the specialty items. All specialty item fully operational, as is.
6	Moderate Defects	Repairs are required beyond cosmetics, but item does not require replacement.
4	Serious Defects	Specialty items are structurally sound, but require replacement due to handicap code.
2	Excessive Defects	Specialty items do not function properly or are structurally unsound and require replacement.
0	Failed	Specialty item presents a danger to building occupants.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: SPECIALTY ITEMS
Sub-Component: Safety Items

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	Like New	Like new with no defects. All installed equipment is in new condition and conforms to “state of the art” technology. All base facilities requiring safety equipment have it installed and it is functioning at greater than 99% reliability.
8	Minor Defects	Equipment is fully operational and requires only preventive maintenance or minor repairs. More than 90% of the facilities requiring safety equipment have it installed. All equipment is functioning at greater than 99% reliability.
6	Moderate Defects	Equipment is fully operational but requires repairs to increase reliability. Between 80% and 90% of the facilities requiring safety equipment have it installed and/or installed equipment is functioning at 90% or greater reliability.
4	Serious Defects	Equipment is operational but requires major repairs to increase reliability. Between 50% and 79% of the facilities requiring safety equipment have it installed and/or installed equipment is functioning at 75% or greater reliability.
2	Excessive Defects	Equipment is not reliable and requires major repairs. Less than 49% of the facilities requiring safety equipment have it installed and/or installed equipment is functioning at less than 50% reliability.
0	Failed	The safety equipment will not function.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: SPECIALTY ITEMS
Sub-Component: Security Items

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	Like New	Like new with no defects. All installed equipment is in new condition and conforms to “state of the art” technology. All base facilities requiring security equipment have it installed and it is functioning at greater than 99% reliability.
8	Minor Defects	Equipment is fully operational and requires only preventive maintenance or minor repairs. More than 90% of the facilities requiring security equipment have it installed. All equipment is functioning at greater than 99% reliability.
6	Moderate Defects	Equipment is fully operational but requires repairs to increase reliability. Between 80% and 90% of the facilities requiring security equipment have it installed and/or installed equipment is functioning at 90% or greater reliability.
4	Serious Defects	Equipment is operational but requires major repairs to increase reliability. Between 50% and 79% of the facilities requiring security equipment have it installed and/or installed equipment is functioning at 75% or greater reliability.
2	Excessive Defects	Equipment is not reliable and requires major repairs. Less than 49% of the facilities requiring security equipment have it installed and/or installed equipment is functioning at less than 50% reliability.
0	Failed	The security equipment will not function.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Air Handlers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The air handler is operating adequately within the design specifications and is delivering conditioned air at its rated capacity.
8	Minor Defects	The air handler is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The unit is down for unscheduled maintenance no more than once a year. There is no backup system available to continue conditioned air delivery.
4	Serious Defects	The air handler is down for unscheduled maintenance no more than three times during the year. There is no backup system available to continue conditioned air delivery.
2	Excessive Defects	The air handler is down for unscheduled maintenance more than three times during the year. The coils have major leaks. The fan requires major modification.
0	Failed	The air handler is no longer functional or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Dedicated Heating/Cooling Units

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The dedicated unit is still operating as it is design specifications and is delivering conditioned air at the equipment's rated capacity.
8	Minor Defects	The dedicated unit is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The dedicated unit is down for unscheduled maintenance no more than once a year. There is no backup air conditioning available to continue conditioned air delivery.
4	Serious Defects	The dedicated unit is down for unscheduled maintenance no more than three times during the year. There is no backup air conditioning available to continue conditioned air delivery.
2	Excessive Defects	The dedicated unit is down for unscheduled maintenance more than three times during the year. The unit has major leaks and does not perform anywhere near design specifications.
0	Failed	The dedicated unit is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Evaporative Coolers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The evaporative cooler is still operating at its design specifications and is delivering cooled air at its rated capacity.
8	Minor Defects	The evaporative cooler is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The cooler is down for unscheduled maintenance no more than once a year. There is no backup cooling capacity available to continue cool air delivery.
4	Serious Defects	The evaporative cooler is down for unscheduled maintenance no more than three times during the year. There is no backup cooling capacity available to continue cool air delivery.
2	Excessive Defects	The evaporative cooler is down for unscheduled maintenance more than three times during the year. The cooler has major mechanical problems and does not perform anywhere near design specifications.
0	Failed	The evaporative cooler is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Exhausters/Ventilators

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The exhauster/ventilator is still operating at its design specifications and is evacuating air at its rated capacity.
8	Minor Defects	The exhauster/ventilator is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The exhauster /ventilator is down for unscheduled maintenance no more than once a year. There is no backup exhausting capability available to continue air exhaust.
4	Serious Defects	The exhauster/ventilator is down for unscheduled maintenance no more than three times during the year. There is no backup exhausting capacity available to continue exhausting air.
2	Excessive Defects	The exhauster/ventilator is down for unscheduled maintenance more than three times during the year. The exhauster has major mechanical problems and does not perform anywhere near design specifications.
0	Failed	The exhauster/ventilator is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Humidifiers/Dehumidifiers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The humidifier or dehumidifier is still operating at its design specifications and is humidifying or dehumidifying air at its rated capacity.
8	Minor Defects	The humidifier or dehumidifier is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The unit is down for unscheduled maintenance no more than once a year. There is no backup humidifying or dehumidifying capability available to continue air conditioning.
4	Serious Defects	The humidifier or dehumidifier is down for unscheduled maintenance no more than three times during the year. There is no backup humidifying/ dehumidifying capacity available to continue air conditioning.
2	Excessive Defects	The humidifier or dehumidifier is down for unscheduled maintenance more than three times during the year. The humidifier or dehumidifier has major mechanical problems and does not perform anywhere near design specifications.
0	Failed	The humidifier or dehumidifier is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Heat Recovery/Storage/Exchange Units

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The unit is still operating at its design specifications and is recovering heat at its rated design.
8	Minor Defects	The unit is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The unit is down for unscheduled maintenance no more than once a year. There is no backup mechanism available to continue the system's heat recovery function.
4	Serious Defects	The unit is down for unscheduled maintenance no more than three times during the year. There is no backup mechanism available to continue system's heat recovery function.
2	Excessive Defects	The unit is down for unscheduled maintenance more than three times during the year. The system has major mechanical problems and does not perform anywhere near design specifications.
0	Failed	The unit is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: HVAC Controls

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The HVAC controls are still operating within its design specifications and is controlling HVAC processes and equipment.
8	Minor Defects	The HVAC controls are fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The HVAC controls are down for unscheduled maintenance no more than once a year. The system sometimes will not operate on fully automatic. There is no backup system available to continue controlling the HVAC processes and equipment.
4	Serious Defects	The HVAC controls are down for unscheduled maintenance no more than three times during the year. The system will frequently not operate on fully automatic. There is no backup system available to continue controlling the HVAC processes and equipment.
2	Excessive Defects	The HVAC controls are down for unscheduled maintenance more than three times during the year. The system has major mechanical problems and they do not perform anywhere near design specifications. The system will not operate on full automatic and has to be operated on manual control.
0	Failed	The HVAC controls are no longer functional or can not be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: HEATING, VENTILATION & AIR CONDITIONING SYSTEM
Sub-Component: Ductwork & Accessories

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The ductwork and accessories are still in their designed configuration and delivering conditioned air at the served equipment's rated capacity.
8	Minor Defects	The ductwork and accessories are fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The ductwork system is down for unscheduled maintenance no more than once a year.
4	Serious Defects	The ductwork and accessories are down for unscheduled maintenance no more than three times during the year.
2	Excessive Defects	The ductwork and accessories are down for unscheduled maintenance more than three times during the year. The ductwork has major leaks and the insulation has failed or has major damage. Duct requires major upgrading to meet new requirements.
0	Failed	The ductwork and accessories are no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Building Transformers & Switches

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All base facilities are serviced by "state-of-the-art" transformers and switches that are sized to serve the building plus a minimum 10% growth.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. More than 95% of the base facilities have installed transformers and switches that are "state-of-the-art" and reliable for day to day operations. There are no transformers containing PCB's in use.
6	Moderate Defects	Some repairs required with the components experiencing no more than one outage during the past year. More than 80% of the base facilities have dependable transformers and switches installed.
4	Serious Defects	Major repairs required with the components experiencing no more than two outages during the past year. More than 70% of the base facilities have dependable transformers and switches installed. Transformers containing PCB's are in use.
2	Excessive Defects	Major repairs or replacement required with the components experiencing more than two outages during the past year. More than 50% of the base facilities have dependable transformers and switches installed.
0	Failed	Components are unusable. Less than 50 % of the base facilities have dependable transformers and switches in use. Transformers containing PCB's are leaking.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Interior Wiring and Circuit Breakers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Wiring in base facilities meet code for installation and size.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. More than 95% of the base facilities have wiring of adequate size to carry the loads that are now in the building. Circuit protection is matched to the wire size.
6	Moderate Defects	Some repairs required with the components experiencing no more than two outages during the past year. More than 80% of the base facilities have wiring of adequate size to carry the loads that are on the circuit.
4	Serious Defects	Major repairs required with the components experiencing no more than two outages during the past year. More than 70% of the base facilities have wiring of adequate size to carry the loads that are on the circuits.
2	Excessive Defects	Major repairs or replacement required with the components experiencing more than two outages during the past year. More than 50% of the base facilities have wiring of adequate size to carry the loads that are on the circuits.
0	Failed	Components are unusable. Less than 50% of the base facilities have wiring of adequate size to carry the loads that are on the circuits.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Interior/Exterior Lighting

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Areas are lighted to maximize safety, convenience, and energy efficiency.
8	Minor Defects	Lighting units are fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	Lighting units are fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded to maximize safety, convenience, and energy efficiency.
4	Serious Defects	Lighting units are operational but requires unscheduled repairs more than once a year. Safety and operational requirements may be compromised because of failures and a lack of adequate lighting.
2	Excessive Defects	Lighting units are not reliable because of the need for major repairs. Operational requirements are not being met.
0	Failed	Lighting units are unusable. Safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Energy Management and Controls

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Entire facility has acceptable central building control equipment that is tied to a base system.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. More than 95% of the applicable equipment is connected to an operational central control system within the facility which is tied into a central system.
6	Moderate Defects	Some repairs required with the components experiencing no more than one outage during the past year. More than 80% of the applicable equipment is connected to an operational central control system within the facility which is tied into a central system.
4	Serious Defects	Major repairs required with the components experiencing no more than two outages during the past year. More than 50% of the applicable equipment is connected to an operational central control system within the facility which is tied into a central system.
2	Excessive Defects	Major repairs or replacement required with the components experiencing more than two outages during the past year. More than 25% of the applicable equipment is connected to an operational central control system within the facility which is tied into a central system.
0	Failed	Components are unusable. Less than 25% of the applicable equipment is connected to an operational central control system within the facility and it is not tied into a central system.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Generators and Other Backup Power Supply

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All items operate properly and provide power on demand.
8	Minor Defects	All items are fully operational but require preventive maintenance and service at regular intervals. Minor repairs required only on non-critical components. Automatic start and transfer controls operate properly. Rated capacities are achieved during testing.
6	Moderate Defects	All items are fully operational but some repair required for worn or damaged parts. Ratings are high enough to handle 90% of the loads. Minor repairs required on some critical and/or non-critical items.
4	Serious Defects	All items are operational but major repairs required on critical and/or non-critical components. Parts for repair are not readily available. Ratings are high enough to handle 80% of the loads.
2	Excessive Defects	Most items are not reliable and seldom operate due to the need for major repairs required on critical components. There is a 50% or more failure rate. Parts are not readily available and must be custom made.
0	Failed	Backup power supply is not operational.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: ELECTRICAL
Sub-Component: Communications

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	Like New	Like new with no defects. All installed lines and equipment are in new condition and conforms to “state of the art” technology. All base facilities requiring communications lines and equipment have it installed and are functioning at greater than 99% reliability.
8	Minor Defects	Lines and equipment are fully operational and requires only preventive maintenance or minor repairs. More than 90% of the facilities requiring communications lines and equipment have it installed. All are functioning at greater than 99% reliability.
6	Moderate Defects	Lines and equipment are fully operational but requires repairs to increase reliability. Between 80% and 90% of the facilities requiring communications lines and equipment have it installed. All are are functioning at 90% or greater reliability.
4	Serious Defects	Lines and equipment are operational but requires major repairs to increase reliability. Between 50% and 79% of the facilities requiring communications lines and equipment have it installed. All are functioning at 75% or greater reliability.
2	Excessive Defects	Lines and equipment is not reliable and requires major repairs. Less than 49% of the facilities communications lines and equipment have it installed. All are functioning at less than 50% reliability.
0	Failed	The communications lines and equipment will not function.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Natural Gas Piping

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects
8	Minor Defects	No leaks and only minor corrosion on pipes. Only preventive maintenance or minor repairs required.
6	Moderate Defects	Valves may be difficult to operate. Some pipe surface corrosion.
4	Serious Defects	Leaks detected at least once a year causing down time for repairs.
2	Excessive Defects	Valves do not close fully. Leaks cause downtime at least twice a year.
0	Failed	System is not usable due to excessive leaks. It is not safe to operate.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Liquid Petroleum Piping

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Valves may be difficult to operate. Some pipe surface corrosion.
4	Serious Defects	Leaks detected at least once a year causing down time for repairs.
2	Excessive Defects	Valves do not close fully. Leaks cause downtime at least twice a year.
0	Failed	System is not usable due to excessive leaks. It is not safe to operate.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Compressed Air and Other Industrial Gases

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. No leaks and only minor corrosion on pipes.
6	Moderate Defects	Valves may be difficult to operate. Some pipe surface corrosion.
4	Serious Defects	Leaks detected at least once a year causing down time for repairs.
2	Excessive Defects	Valves do not close fully. Leaks cause downtime at least twice a year.
0	Failed	System is not usable due to excessive leaks. It is not safe to operate.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Water and Sanitary Sewer Piping

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Rated capacity is being achieved.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. Rated capacity is being achieved.
6	Moderate Defects	The system requires unscheduled repairs at least once a year.
4	Serious Defects	The system requires unscheduled repairs at least twice a year. Some of systems not of adequate capacity.
2	Excessive Defects	The system requires frequent repairs during the year. More than 30% of the system is not of adequate capacity.
0	Failed	Systems is not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Regulators And Valves

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Regulators and valves operate properly.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Regulators and valves operate properly, but require replacement of leaking seals and other worn parts. Equipment is prone to unscheduled outages.
4	Serious Defects	Regulators and valves operate properly, but have been out of service occasionally for repair of seals and other worn parts. Equipment experiences periodic unscheduled maintenance outages.
2	Excessive Defects	Regulators and valves are seldom in service. Replacement parts are limited or not available. Performance is inadequate.
0	Failed	Regulators and valves are not operational. Rated capacity is not being achieved.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: House Pumps

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Pumps provide water at correct pressure and quantity.
8	Minor Defects	Pumps are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Pumps operate properly, but require replacement of leaking seals and worn parts. Pumps are prone to unscheduled outages.
4	Serious Defects	Pumps operate properly, but have been out of service occasionally for repair of seals, diaphragms, or other worn parts.
2	Excessive Defects	Pumps are seldom in service due to damaged or worn parts. Replacement parts are limited or not available. Water quantities and pressure is inadequate.
0	Failed	Pumps are not operational.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Fixtures

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Components require repair or replacement of faucets, seats, washers, or cracked fixtures. Unscheduled repairs occur no more than once a year.
4	Serious Defects	Components require repair or replacement of faucets, toilet seats, washers, O-rings, or cracked fixtures. Unscheduled repair occurs at least twice a year.
2	Excessive Defects	Components require unscheduled repair frequently during the year.
0	Failed	Components are not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: PLUMBING
Sub-Component: Water Heaters

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Heaters are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Heaters require intermittent relighting. Unscheduled repairs occur no more than once a year. Minor lime build up.
4	Serious Defects	Heaters require frequent relighting. Relief valves occasionally pop off. Unscheduled maintenance at least twice a year. Moderate lime build up.
2	Excessive Defects	Heaters will not stay lit. Relief valve keeps popping off. Unscheduled maintenance more than twice a year.
0	Failed	Heaters leaks and are not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Mechanical Items

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Equipment is operational but has a 15% probability of requiring a downtime of 8 or more hours during the year.
4	Serious Defects	Equipment is operational but has a 30% probability of requiring a downtime of 8 or more hours during the year.
2	Excessive Defects	Equipment is not reliable and has a 50% probability of requiring a downtime of 8 or more hours during the year.
0	Failed	Equipment does not operate or is unsafe.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Clean Rooms

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The clean room is still operating at its design specifications and is delivering clean air at its rated capacity.
8	Minor Defects	The clean room is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The room is down for unscheduled maintenance no more than once a year.
4	Serious Defects	The clean room is down for unscheduled maintenance no more than three times during the year.
2	Excessive Defects	The clean room is down for unscheduled maintenance more than three times during the year. The room has major mechanical problems and does not perform anywhere near design specifications.
0	Failed	The clean room is no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Air Pollution

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All systems are operational with no Federal, State, or local environmental violations, including any Environmental Compliance Assessment and Management Program (ECAMP) findings.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required. No Federal, State, or local environmental violations, including any ECAMP findings.
6	Moderate Defects	Equipment is operational but requires unscheduled repairs no more than two times during the year. No Federal, State, or local environmental violations, including any ECAMP findings.
4	Serious Defects	Equipment is operational but requires unscheduled repairs no more than three times during a year. No more than one of these resulted in a Federal, State, or local environmental violation, including any ECAMP finding.
2	Excessive Defects	Equipment is operational but requires unscheduled repairs four or more times during a year. More than one of these resulted in a Federal, State, or local environmental violation, including any ECAMP finding.
0	Failed	Equipment is not operational and cannot meet Federal, State, or local environmental regulations.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Water Pollution

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All systems are operational with no Federal, State, or local environmental violations, including any Environmental Compliance Assessment and Management Program (ECAMP) findings.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required. No Federal, State, or local environmental violations, including any ECAMP findings.
6	Moderate Defects	Equipment is operational but requires unscheduled repairs no more than two times during the year. No Federal, State, or local environmental violations, including any ECAMP findings.
4	Serious Defects	Equipment is operational but requires unscheduled repairs no more than three times during a year. No more than one of these resulted in a Federal, State, or local environmental violation, including any ECAMP finding.
2	Excessive Defects	Equipment is operational but requires unscheduled repairs four or more times during a year. More than one of these resulted in a Federal, State, or local environmental violation, including any ECAMP finding.
0	Failed	Equipment is not operational and cannot meet Federal, State, or local environmental regulations.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Solar Collectors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The solar collectors are still operating at their design specifications and are delivering solar heat at their rated capacity.
8	Minor Defects	The solar collectors are fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The collectors are down for unscheduled maintenance no more than once a year. There is no backup collector capacity available to continue solar heat delivery.
4	Serious Defects	The solar collectors are down for unscheduled maintenance no more than three times during the year. There is no backup collector capacity available to continue solar heat delivery.
2	Excessive Defects	The solar collectors are down for unscheduled maintenance more than three times during the year. The collectors have major mechanical problems and they do not perform anywhere near design specifications.
0	Failed	The solar collectors are no longer functional or cannot be safely or efficiently used.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Dedicated Compressed Air

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Rated capacity is being achieved.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required. Rated capacity is being achieved.
6	Moderate Defects	Components are operational but are experiencing a 10% loss in capacity. System is down once a year for unscheduled repairs.
4	Serious Defects	Components are operational but are experiencing a 25% loss in capacity. System is down twice a year for unscheduled repairs.
2	Excessive Defects	Components are not reliable. Capacities are less than 50% of designed capacities. System is down more than twice a year for unscheduled repairs.
0	Failed	Equipment is inoperable and no compressed air being generated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Elevators And Escalators

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Equipment is operational but has a 15% probability of requiring a downtime of 8 or more hours during the year.
4	Serious Defects	Equipment is operational but has a 30% probability of requiring a downtime of 8 or more hours during the year.
2	Excessive Defects	Equipment is not reliable and has a 50% probability of requiring a downtime of 8 or more hours during the year.
0	Failed	Equipment do not operate or is unsafe.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: MECHANICAL
Sub-Component: Lifts, Small And Large Hoists, and Cranes

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Equipment is operational but has a 15% probability of requiring a downtime of 8 or more hours during the year.
4	Serious Defects	Equipment is operational but has a 30% probability of requiring a downtime of 8 or more hours during the year.
2	Excessive Defects	Equipment is not reliable and has a 50% probability of requiring a downtime of 8 or more hours during the year.
0	Failed	Equipment do not operate or is unsafe.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: Sprinklers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and meets all current NFPA and Air Force standards.
8	Minor Defects	Sprinkler systems operate properly on demand and only preventive maintenance is required.
6	Moderate Defects	Sprinkler systems are operational but should be upgraded to meet NFPA 13 and Air Force standards.
4	Serious Defects	Sprinkler systems requires extensive maintenance to upgrade components on a yearly basis.
2	Excessive Defects	Sprinkler systems are inoperative at times to replace damaged components. Some systems are below NFPA and Air Force standards.
0	Failed	Sprinkler systems no longer functional and buildings are unsafe for occupancy and/or equipment.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: AFFF

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and meets all current NFPA and Air Force standards. Foam systems activate and operate properly on demand.
8	Minor Defects	Foam systems are operational; however, it requires routine preventive maintenance peculiar to this system.
6	Moderate Defects	Foam systems need some maintenance to upgrade and maintain valves, heads, detecting devices, and piping on an annual basis.
4	Serious Defects	Foam systems requires extensive maintenance to upgrade components on a yearly basis.
2	Excessive Defects	Foam systems are inoperative at times to replace damaged components. Some systems are below NFPA and Air Force standards.
0	Failed	Foam systems no longer functional and buildings are unsafe for occupancy and/or equipment.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: Carbon Dioxide (CO₂)

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and meets all current NFPA and Air Force standards. Systems activate and operate properly on demand. Nozzles provide proper dispersal of agent. Refrigeration system is functioning properly.
8	Minor Defects	Carbon dioxide systems are operational and only preventive maintenance is required. Pressurized systems with agent need to be monitored/checked to ensure full charge is available.
6	Moderate Defects	Carbon dioxide systems contaminate and saturate exposed area. Dispersal of agent is difficult after extended periods of storage. Detectors require extensive maintenance.
4	Serious Defects	Exterior carbon dioxide hoses require replacement. Seals on pressurized lines leak, depleting system. Detectors and refrigeration system requires extensive maintenance.
2	Excessive Defects	Some carbon dioxide systems are frequently out of service for repair of valves, nozzles, and supply hoses.
0	Failed	Carbon dioxide systems no longer function, pressurized bottles are out dated or are empty. Supply hoses are damaged. Gages are damaged or broken. Detectors do not function. Refrigeration system is inoperable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: Fire Alarm Panels

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Alarm panels operate properly and identify and isolate troubled area or zone.
8	Minor Defects	Alarm panels are operational, and only preventive maintenance or minor repairs required.
6	Moderate Defects	Alarm panels activate false alarms and reset intermittently. Some equipment is outdated and needs to be upgraded. Some wiring also needs to be replaced.
4	Serious Defects	Alarm panels are frequently out of service for replacement of switches, relays, and zone lights.
2	Excessive Defects	Alarm panels activate false alarms causing dispersal of fire suppression agents. Master alarm panels will not reset.
0	Failed	Alarm panels are inoperative or are outdated and not compatible with remainder of system.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: Detectors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Detectors operate properly and transmit alarms to fire alarm panel.
8	Minor Defects	Detectors operate properly but require preventive maintenance and testing at regular intervals.
6	Moderate Defects	Between 5% and 15% of the detectors fail to or falsely activate and require repair or replacement.
4	Serious Defects	Between 15% and 25% of the detectors fail to or falsely activate and require repair or replacement.
2	Excessive Defects	Between 25% and 50% of the detectors fail to or falsely activate and require repair or replacement.
0	Failed	More than 50% of detectors fail to or falsely activate with the potential for extensive fire damage and loss.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: Pull Stations

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Hand pull stations operate properly and transmit alarms to fire alarm panel.
8	Minor Defects	Hand pull stations operate properly but require preventive maintenance and testing at regular intervals.
6	Moderate Defects	Less than 15% of the pull stations do not function properly and they must be repaired or replaced.
4	Serious Defects	Between 15% to 25% of the pull stations do not function properly and they must be repaired or replaced.
2	Excessive Defects	Between 25% to 50% of the pull stations do not function properly and they must be repaired or replaced.
0	Failed	More than 50% of the hand pull stations do not function properly and they must be replaced.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: BUILDING SYSTEM
COMPONENT: FIRE PROTECTION
Sub-Component: HALON

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and meets all current NFPA and Air Force standards. HALON systems activate and operate properly on demand. Dispersal systems and nozzles provide adequate distribution of agent.
8	Minor Defects	HALON systems are operational with the dispersal systems and nozzles providing adequate distribution of agent. Preventive maintenance and monitoring required to ensure full charge is available.
6	Moderate Defects	HALON systems contaminate and saturate exposed areas. Detectors require some maintenance to be fully operational. Electrical and computer systems require some service prior to reuse.
4	Serious Defects	Some HALON systems are frequently out of service for repair/replacement of valves, nozzles, seals, and supply hoses. External systems require replacement of seals and rubber hoses.
2	Excessive Defects	HALON areas exposed to agent pose serious threat to personnel. Possible death if area is not evacuated upon accidental discharge of system. External portable units produce static electrical shock.
0	Failed	HALON systems no longer function. Pressurized bottles are empty or are outdated. Gages are damaged or broken. Detectors do not function.

NOTE: *Chemical HALON systems are being replaced DOD wide by new fire suppression systems. This conversion should be completed by FY95.*

UTILITY SYSTEM
(B)

INFRASTRUCTURE CONDITION STANDARD

UTILITY SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
NATURAL GAS STORAGE & DISTRIBUTION	12.1%
Pipes, Valves & Fittings	(6.1%)
Regulators	(0.7%)
Storage Tanks	(5.2%)
Cathodic Protection	(0.1%)
LIQUID FUELS STORAGE & DISTRIBUTION	18.7%
Pipes, Valves & Fittings	(6.8%)
Pumps	(3.6%)
Storage Tanks	(6.9%)
Secondary Containment	(1.3%)
Cathodic Protection	(0.1%)
ELECTRICAL DISTRIBUTION	32.1%
Substations	(12.1%)
Poles and Related Hardware	(2.5%)
Conductors	(10.1%)
Switches	(1.5%)
Step-down Transformers	(4.9%)
Communication Lines	(1.0%)
CENTRAL STEAM/HTHW GENERATION & DISTRIBUTION	26.9%
Steam/Hot Water Generation	(13.8%)
Heating System Water Treatment	(1.1%)
Fuel Supply	(3.9%)
Distribution & Condensate Return	(8.1%)
CENTRAL CHILLED WATER GENERATION & DISTRIBUTION	7.1%
Centrifugal Chillers	(1.5%)
Absorption Chillers	(1.3%)
Packaged Reciprocation Chillers	(1.1%)
Refrigeration Compressors	(0.2%)
Packaged Condensing Units	(0.6%)
Cooling Towers/Condensers	(1.1%)
Chilled Water/Condenser Water Distribution	(1.2%)
Cooling System Water Treatment	(0.1%)

INFRASTRUCTURE CONDITION STANDARD

UTILITY SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
COMPRESSED AIR GENERATION & DISTRIBUTION	3.1%
Compressors	(1.7%)
Pipes, Valves & Fittings	(1.3%)
Cathodic Protection	(0.1%)
 TOTAL	<hr/> 100.0%

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: NATURAL GAS STORAGE & DISTRIBUTION
Sub-Component: Pipes, Valves & Fittings

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Elements are constructed with appropriate materials
8	Minor Defects	Preventive maintenance or minor repairs required. Annual failure rate at less than 1 per 3 miles of line.
6	Moderate Defects	Annual failure rate at less than 1 per 2 miles of line.
4	Serious Defects	History of leaks on between 10% and 20% of the elements. Section of piping constructed with inappropriate material. Any leak which causes loss of gas service to a facility.
2	Excessive Defects	History of leaks on over 20% of the elements. Elements have major corrosion.
0	Failed	Unusable. Any leak endangering life or property.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: NATURAL GAS STORAGE & DISTRIBUTION
Sub-Component: Regulators

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Regulators operate properly.
8	Minor Defects	Items are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Regulators operate properly, but require replacement of leaking seals and other worn parts. Elements are prone to unscheduled outages
4	Serious Defects	Regulators operate properly, but have been out of service occasionally for repair of seals and other worn parts. Elements experience periodic outages for unscheduled repairs.
2	Excessive Defects	Regulators are seldom in service. Replacement parts are limited or not available.
0	Failed	Regulators are not operational.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: NATURAL GAS STORAGE & DISTRIBUTION
Sub-Component: Storage Tanks

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Storage tanks provide adequate fuel storage and pressure.
8	Minor Defects	Storage tanks are fully functional with only preventive maintenance or minor repairs required.
6	Moderate Defects	Storage tanks are fully functional but some joints have minor leaks and need repair. Interior of the storage tanks need to be drained and cleaned. Exterior of tanks need to be cleaned and painted to prevent rust and corrosion of tanks.
4	Serious Defects	Storage tanks are functional but capacity may be inadequate. Tanks are leaking fuel with excessive visual corrosion. Seals and joints need to be repaired or replaced.
2	Excessive Defects	Storage tanks are damaged and not reliable. Fuel pressure must be reduced for service tanks and/or distribution lines to provide service.
0	Failed	Storage tanks are damaged and will not hold fuel or provide pressure. Any leak endangering life or property.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: NATURAL GAS STORAGE & DISTRIBUTION
Sub-Component: Cathodic Protection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All underground pipelines and tanks that require cathodic protection are protected with an operable system that will register the proper resistance when checked.
8	Minor Defects	The system is fully operational with only preventive maintenance or minor repairs required. Cathodic protection is installed on all underground pipelines and tanks that require it.
6	Moderate Defects	The system is operational but some repairs are required. More than 80% of the underground pipelines and tanks that require protection have cathodic protection installed.
4	Serious Defects	The equipment is operational but major repairs are required. More than 50% of the underground pipelines and tanks that require protection have cathodic protection installed.
2	Excessive Defects	Some of the equipment is inoperable and major repairs or replacement are required. More than 25% of the underground pipelines and tanks that require it have adequate cathodic protection.
0	Failed	Equipment is unusable. Less than 25% of the underground pipelines and tanks have adequate protection.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: LIQUID FUELS STORAGE & DISTRIBUTION
Sub-Component: Pipes, Valves, & Fittings

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Elements are constructed with appropriate materials
8	Minor Defects	Preventive maintenance or minor repairs required. Annual failure rate at less than 1 per mile of line. Some sticking valves.
6	Moderate Defects	Annual failure rate at less than 2 per mile of line. Several inoperative, buried or lost valves.
4	Serious Defects	History of leaks on between 10% and 20% of the elements. Several inoperative, buried or lost valves. Section of piping constructed with inappropriate material.
2	Excessive Defects	History of leaks on over 20% of the elements. Some of the elements have major corrosion. Numerous non-functioning valves.
0	Failed	Unusable. Any leak endangering life or property.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: LIQUID FUELS STORAGE & DISTRIBUTION
Sub-Component: Pumps

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Pumps operate properly on demand and provide distribution as required.
8	Minor Defects	Pumps operate properly with only regular preventive maintenance or minor repairs required to keep equipment operational.
6	Moderate Defects	Pumps operate properly but require minor replacement of worn parts.
4	Serious Defects	Pumps operate properly but are occasionally off line for repair. Some parts are damaged or broken.
2	Excessive Defects	Pumps are seldom in service due to damaged or worn parts. Replacement parts are limited or not available. Distribution of liquid fuel is restricted.
0	Failed	Pumps are not operational.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: LIQUID FUELS STORAGE & DISTRIBUTION
Sub-Component: Storage Tanks

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Storage tanks and supply lines provide adequate fuel storage and pressure.
8	Minor Defects	Storage tanks and lines are fully functional with only preventive maintenance or minor repairs required.
6	Moderate Defects	Storage tanks and lines are fully functional but some joints have minor leaks and need repair. Interior of the storage tanks need to be drained and cleaned. Exterior of tanks need to be cleaned and painted to prevent rust and corrosion of tanks.
4	Serious Defects	Storage tanks and lines are functional but capacity may be inadequate. Tanks are leaking fuel with excessive visual corrosion. Seals and joints need to be repaired or replaced.
2	Excessive Defects	Storage tanks and lines are damaged and not reliable. Fuel pressure must be reduced for service tanks and/or distribution lines to provide service.
0	Failed	Storage tanks and lines are damaged and will not hold fuel or provide pressure. Any leak endangering life or property.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: LIQUID FUELS STORAGE & DISTRIBUTION
Sub-Component: Secondary Containment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All tanks have containment systems adequate to contain contents of the tank with proper leak detection. All dikes are in good shape with no erosion.
8	Minor Defects	Preventive maintenance or minor repairs required. Minor erosion on some of the dikes with surface cracking in concrete containment or weathering of other containment systems. No environmental compliance problems.
6	Moderate Defects	Moderate erosion on some of the dikes with minor structural cracking in concrete containment or weathering of other containment systems. Only minor environmental compliance problems.
4	Serious Defects	Serious erosion on some of the dikes with significant structural cracking in concrete containment or weathering of other containment systems.
2	Excessive Defects	Major structural cracking in concrete containment or severe weathering in the dikes. Serious environmental compliance problems exist.
0	Failed	Dikes do not exist or existing dikes do not provide reliable containment.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: LIQUID FUELS STORAGE & DISTRIBUTION
Sub-Component: Cathodic Protection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All underground pipelines and tanks that require cathodic protection are protected with an operable system that will register the proper resistance when checked.
8	Minor Defects	The system is fully operational with only preventive maintenance or minor repairs required. Cathodic protection is installed on all underground pipelines and tanks that require it.
6	Moderate Defects	The system is operational but some repairs are required. More than 80% of the underground pipelines and tanks that require protection have cathodic protection installed.
4	Serious Defects	The equipment is operational but major repairs are required. More than 50% of the underground pipelines and tanks that require protection have cathodic protection installed.
2	Excessive Defects	Some of the equipment is inoperable and major repairs or replacement are required. More than 25% of the underground pipelines and tanks that require it have adequate cathodic protection.
0	Failed	Equipment is unusable. Less than 25% of the underground pipelines and tanks have adequate protection.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Substations

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The substations are fully operational and handle all peak loads. Transformers are certified to be PCB free.
8	Minor Defects	The substations are fully operational and only require preventive maintenance or minor repairs. Transformers handle all loads but have minor voltage drops due to peak loads. Equipment is less than 15 years old. No more than one outage has been experienced in the past 5 years.
6	Moderate Defects	The substations are fully operational and handle most loads with only minor voltage drop problems. Transformers have minor leaks and equipment problems. Equipment is between 15 and 20 years old. No more than two outages have been experienced in past 5 years.
4	Serious Defects	The substations are operational and handle most loads but there are voltage drop problems due to seasonal peaks. Transformers have leaks and equipment problems. Equipment is between 20 and 30 years old. Three or four electrical outages have been experienced in the past 5 years.
2	Excessive Defects	The substations are marginally operational and have voltage drop problems on daily peak loads. Transformers have major leaks and equipment problems. Equipment is over 35 years old. There has been one or more electrical outages per year.
0	Failed	The substation will not safely control or transmit power.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Poles And Related Hardware

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Poles and hardware only require preventive maintenance or minor repairs to correct tightness and structural defects. The poles and hardware are less than 15 years old.
6	Moderate Defects	The poles and hardware are between 15 and 20 years old and/or have unscheduled repairs no more than once during the past year.
4	Serious Defects	The poles and hardware are between 20 and 30 years old and/or have unscheduled repairs no more than three times during the past year.
2	Excessive Defects	The poles and hardware are over 35 years old and/or have unscheduled repairs more than three times during the past year. Poles and related hardware are defective, loose, and structurally unsound.
0	Failed	The poles and related hardware are unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Conductors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Conductors provide power as designed.
8	Minor Defects	The conductors are less than 15 years old and require only preventive maintenance or minor repairs.
6	Some Defects	The conductors are between 15 and 20 years old and/or have no more than one outage in the past year.
4	Serious Defects	The conductors are between 20 and 30 years old. and/or have no more than three outages in the past year.
2	Excessive Defects	The conductors are over 35 years old and /or have more than four outages in the past year.
0	Failed	The conductors are not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Switches

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The switches operate easily and smoothly. All switches are pad mounted.
8	Minor Defects	The switches are fully operational and require only preventive maintenance or minor repairs. Over 80% of the switches are pad mounted.
6	Moderate Defects	The switches are fully operational but function with some difficulty. There have been no more than two power outages in the past year due to failures. Parts need to be replaced occasionally to keep them operational. Over 60% of the switches are pad mounted.
4	Serious Defects	The switches are operational but function with a fair amount of difficulty. There have been no more than three power outages in the past year due to failures. Frequent repairs or the use of on-hand spare parts are necessary to keep operational. Over 40% of the switches are pad mounted.
2	Excessive Defects	The switches are not reliability and have to be forced to operate. There have been more than three power outages in the past year due to failures. Needed spare or replacement parts are not available. Less than 30% of the switches are pad mounted.
0	Failed	The switches will not operate.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Step-down Transformers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	Like New	Like new with no defects. The transformers meet current code requirements.
8	Minor Defects	Transformers are less than 15 years old and PCB free. Over 90% of the transformers meet current code requirements and have only minor voltage problems. Transformers have no leaks and all gauges and equipment are operational.
6	Moderate Defects	Transformers are between 15 and 20 years old and/or over 75% meet current code requirements. Transformers with PCB's are inspected as required. Some transformers have small leaks and over 80% of the gauges and equipment are operational.
4	Serious Defects	Transformers are between 20 and 30 years old and/or less than 50% meet current code requirements. Transformers have some leaks and over 60% of the gauges and equipment are operational. Transformers with PCB's have no oil leaks.
2	Excessive Defects	Transformers are over 35 years old and/or less than 30% meet current code requirements. Transformers have major leaks and most gauges and equipment do not work. Transformers with PCB's have no oil leaks.
0	Failed	The transformers are unusable. Transformers with PCB's have oil leaks.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: ELECTRICAL DISTRIBUTION
Sub-Component: Communication Lines

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The communication lines use “state of the art” technology and provide service as designed.
8	Minor Defects	The communication lines are less than 10 years old and require only preventive maintenance or minor repairs.
6	Some Defects	The communication lines are between 10 and 15 years old and/or have no more than one service outage in the past year.
4	Serious Defects	The communication lines are between 15 and 20 years old. and/or have no more than three service outages in the past year.
2	Excessive Defects	The communication lines are over 20 years old and /or have more than four service outages in the past year.
0	Failed	The communication lines are not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL STEAM/HTHW GENERATION & DISTRIBUTION
Sub-Component: Steam/Hot Water Generation

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Boilers are operating efficiently and supplying rated output on demand. Boilers are sized to meet their requirements.
8	Minor Defects	Boilers are fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The boilers are down no more than once a year during the heating season. There is no backup system to handle the boiler's load.
4	Serious Defects	Boiler is down for unscheduled maintenance no more than three times during the heating season. Boiler efficiency is far below factory standards.
2	Excessive Defects	Boiler is down for unscheduled maintenance more than three times during the heating season. Boiler is leaking water and steam to the atmosphere.
0	Failed	Boiler is no longer functioning and cannot be safely started. The boiler efficiency is so poor it is not cost effective to operate the boiler.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL STEAM/HTHW GENERATION & DISTRIBUTION
Sub-Component: Heating Water Treatment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Treatment systems are operating efficiently and supplying treated water within specifications. Equipment is sized to meet requirements.
8	Minor Defects	Water treatment equipment is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment causes the boilers to be down no more than once a year during the heating season. There is no backup system to handle the equipment's treatment load.
4	Serious Defects	The water treatment equipment is down for unscheduled maintenance no more than three times during the heating season. The equipment efficiency is far below factory standards.
2	Excessive Defects	The water treatment equipment is down for unscheduled maintenance more than three times. The equipment is leaking treatment chemicals and water.
0	Failed	The water treatment equipment is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL STEAM/HTHW GENERATION & DISTRIBUTION
Sub-Component: Fuel Supply

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The fuel supply system is operating adequately with no leaks.
8	Minor Defects	The fuel supply system is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment causes the boilers to be down no more than once a year during the heating season. There is no backup system to handle the fuel supply equipment's load.
4	Serious Defects	The fuel supply equipment is down for unscheduled maintenance no more than three times during the heating season. The equipment efficiency is far below factory standards.
2	Excessive Defects	The fuel supply equipment is down for unscheduled maintenance more than three times during the heating season.
0	Failed	The fuel supply equipment is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL STEAM/HTHW GENERATION & DISTRIBUTION
Sub-Component: Distribution & Condensate Return

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating adequately with no leaks.
8	Minor Defects	This piping system is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment causes the boilers to be down no more than once a year during the heating season. There is no backup system to handle this system's load.
4	Serious Defects	This piping system is down for unscheduled maintenance no more than three times during the heating season. The system's performance is far below original design.
2	Excessive Defects	This piping system is down for unscheduled maintenance more than three times during the heating season. The system has major leaks.
0	Failed	This piping system is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Centrifugal Chillers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The chiller is operating adequately within the design specifications and is providing cooling at its rated capacity.
8	Minor Defects	The chiller is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment is down for unscheduled maintenance no more than once a year during the cooling season. There is no backup system to handle this system's load.
4	Serious Defects	The chiller is down for unscheduled maintenance no more than three times during the cooling season. The system's performance is far below original design.
2	Excessive Defects	The chiller is down for unscheduled maintenance more than three times during the cooling season. The system has major leaks.
0	Failed	The chiller is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Absorption Chillers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The chiller is operating adequately within the design specifications and is providing cooling at its rated capacity.
8	Minor Defects	The chiller is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment is down for unscheduled maintenance no more than once a year during the cooling season. There is no backup system to handle this chiller load.
4	Serious Defects	The chiller is down for unscheduled maintenance no more than three times during the cooling season. The system's performance is far below original design.
2	Excessive Defects	The chiller is down for unscheduled maintenance more than three times during the cooling season. The system has major leaks.
0	Failed	The chiller is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Packaged Reciprocating Chillers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The chiller is operating adequately within the design specifications and is providing cooling at its rated capacity.
8	Minor Defects	The chiller is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment is down for unscheduled maintenance no more than once a year during the cooling season. There is no backup system to handle this system's load.
4	Serious Defects	The chiller is down for unscheduled maintenance no more than three times during the cooling season. The chiller performance is far below original design.
2	Excessive Defects	The chiller is down for unscheduled maintenance more than three times during the cooling season. The chiller has major leaks and requires constant repairs.
0	Failed	The chiller is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Refrigeration Compressors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The refrigeration compressor is operating adequately within the design specifications and is providing refrigeration at their rated capacity.
8	Minor Defects	The refrigeration compressor is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The compressor is down for unscheduled maintenance no more than once a year. There is no system backup to handle the compressor's load.
4	Serious Defects	The refrigeration compressor is down for unscheduled maintenance no more than three times during the year. The compressor's performance is far below the original design.
2	Excessive Defects	The refrigeration compressor is down for unscheduled maintenance more than three times during the year. The compressor has major leaks and requires constant repairs.
0	Failed	The refrigeration compressor is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Packaged Condensing Units

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The package condensing unit is operating adequately within the design specifications and is providing cooling at its rated capacity.
8	Minor Defects	The package condensing unit is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The unit is down for unscheduled maintenance no more than once a year. There is no system backup to handle the condenser's load.
4	Serious Defects	The package condenser unit is down for unscheduled maintenance no more than three times during the year. The unit's performance is far below the original factory specifications.
2	Excessive Defects	The package condenser unit is down for unscheduled maintenance more than three times during the year. The unit has major leaks.
0	Failed	The package condenser unit is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Cooling Towers/Condensers

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The cooling tower and condenser are operating adequately within the design specifications and is providing cooling at its rated capacity.
8	Minor Defects	The cooling tower and condenser are fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The equipment is down for unscheduled maintenance no more than once a year. There is no system backup to handle the equipment's load.
4	Serious Defects	The cooling tower and condenser is down for unscheduled maintenance no more than three times during the year. The unit's performance is far below the original factory specifications.
2	Excessive Defects	The cooling tower and condenser is down for unscheduled maintenance more than three times during the year. The equipment has major leaks.
0	Failed	The cooling tower and condenser is no longer functioning or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Chilled Water/Condenser Water Distribution

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. This distribution system is operating adequately within the design specifications and is delivering water to its designated equipment at its rated capacity.
8	Minor Defects	This distribution system is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The piping system is down for unscheduled maintenance no more than once a year. There is no piping bypasses that could handle the system's load.
4	Serious Defects	The distribution system is down for unscheduled maintenance no more than three times during the year. There is no piping bypasses that could handle the system's load.
2	Excessive Defects	The distribution system is down for unscheduled maintenance more than three times during the year. The piping system has major leaks and antiquated fixtures.
0	Failed	The distribution system is no longer functional or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: CENTRAL CHILLED WATER GENERATION & DISTRIBUTION
Sub-Component: Cooling Water Treatment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The water treatment system is operating adequately within the design specifications and is delivering treated water to its designated equipment at its rated capacity.
8	Minor Defects	The water treatment system is fully operational and only preventive maintenance is required. In some cases equipment should be upgraded to meet current equipment standards.
6	Moderate Defects	The piping system is down for unscheduled maintenance no more than once a year which causes a cooling water to go off spec. There is no backup system available to continue water treatment.
4	Serious Defects	The water treatment system is down for unscheduled maintenance no more than three times during the year. There is no backup system available to continue water treatment.
2	Excessive Defects	The water treatment system is down for unscheduled maintenance more than three times during the year. The piping system has major leaks and is highly corroded.
0	Failed	The water treatment system is no longer functional or cannot be safely operated.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: COMPRESSED AIR GENERATION & DISTRIBUTION
Sub-Component: Compressors

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Power sources operate properly and provide power for air distribution systems on demand. Automatic start controls and fuel or electric systems operate properly.
8	Minor Defects	Components are fully operational with only preventive maintenance or minor repairs required.
6	Moderate Defects	Equipment operate properly; however, repair and/or condition of worn or damaged parts restrict or impact operation and distribution. Some problems with water in air system.
4	Serious Defects	Equipment operates intermittently. Parts for repair are limited or must be manufactured. Major problems with water in air systems.
2	Excessive Defects	Equipment seldom operates due to the need for extensive repairs. Parts are not available and must be manufactured or rebuilt.
0	Failed	Equipment is inoperable. Power sources must be replaced.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: COMPRESSED AIR GENERATION & DISTRIBUTION
Sub-Component: Pipes, Valves & Fittings

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Elements are constructed with appropriate materials
8	Minor Defects	Preventive maintenance or minor repairs required. Annual failure rate at less than 1 per 2 miles of line. Some sticking valves.
6	Moderate Defects	Annual failure rate at less than 1 per mile of line. Several inoperative, buried or lost valves.
4	Serious Defects	History of significant major leaks on between 10% and 20% of the elements. Several inoperative, buried or lost valves. Section of piping constructed with inappropriate material.
2	Excessive Defects	History of significant major leaks on over 20% of the elements. Some of the elements have major corrosion. Numerous non-functioning valves.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: UTILITY SYSTEM
COMPONENT: COMPRESSED AIR GENERATION & DISTRIBUTION
Sub-Component: Cathodic Protection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All underground pipelines and tanks that require cathodic protection are protected with an operable system that will register the proper resistance when checked.
8	Minor Defects	The system is fully operational with only preventive maintenance or minor repairs required. Cathodic protection is installed on all underground pipelines and tanks that require it.
6	Moderate Defects	The system is operational but some repairs are required. More than 80% of the underground pipelines and tanks that require protection have cathodic protection installed.
4	Serious Defects	The equipment is operational but major repairs are required. More than 50% of the underground pipelines and tanks that require protection have cathodic protection installed.
2	Excessive Defects	Some of the equipment is inoperable and major repairs or replacement are required. More than 25% of the underground pipelines and tanks that require it have adequate cathodic protection.
0	Failed	Equipment is unusable. Less than 25% of the underground pipelines and tanks have adequate protection.

**ROADS AND GROUNDS SYSTEM
(C)**

INFRASTRUCTURE CONDITION STANDARD

PAVEMENTS AND GROUNDS SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
PAVEMENTS	71.7%
Roads And Streets	(22.8%)
Parking Lots	(18.9%)
Driveways	(3.2%)
Curbs & Gutters, and Approaches	(5.1%)
Culverts and Bridges	(6.3%)
Signal Lights	(4.7%)
Signs	(7.6%)
Street and Parking Lot Lighting	(3.1%)
GROUNDS	28.3%
Site Work	(5.2%)
Landscaping	(1.6%)
Area Lighting	(1.1%)
Fencing(6.4%)	
Sidewalks, Structures and Miscellaneous Pads	(5.2%)
Drainage Ditches & Canals	(1.3%)
Inlets, Manholes, Catch Basins and Piping	(6.1%)
Railroads	(1.4%)
TOTAL	<hr/> 100.0%

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Roads And Streets

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 2% of the surface has cracks or other minor damage. Cracks do not penetrate to the base course.
6	Moderate Defects	Traffic is restricted no more than once a year for repairs. Between 5% and 10% of the surface has cracks or other moderate damage.
4	Serious Defects	Traffic is restricted no more than twice a year for repairs. Between 15% and 25% of the surface has cracks or deteriorated areas.
2	Excessive Defects	Traffic is restricted more than two times a year for repairs. Over 40% of the surface has deteriorated and most cracks penetrate to the base course. The base course is beginning to fail.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Parking Lots

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Parking is not restricted and requires only preventive maintenance or minor repairs. Less than 2% surface area has only minor cracks. Cracks do not penetrate to the base course.
6	Moderate Defects	Parking is restricted no more than once a year for repairs. Between 10% and 15% of the surface has cracks or other moderate damage.
4	Serious Defects	Parking is restricted no more than twice a year for repairs. Between 15% and 25% of the surface has cracks or deteriorated areas.
2	Excessive Defects	Parking is restricted more than two times a year for repairs. Over 40% of the surface has deteriorated and most cracks penetrate to the base course. The base course is beginning to fail.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Driveways

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Entry is not restricted and the pavement requires only preventive maintenance or minor repairs. Less than 2% surface area has only minor cracks. Cracks do not penetrate to the base course.
6	Moderate Defects	Entry is restricted no more than once a year for repairs. Between 10% and 15% of the surface has cracks or other moderate damage.
4	Serious Defects	Entry is restricted no more than twice a year for repairs. Between 15% and 25% of the surface has cracks or deteriorated areas.
2	Excessive Defects	Entry is restricted more than two times a year for repairs. Over 40% of the surface has deteriorated and most cracks penetrate to the base course. The base course is beginning to fail.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Curbs & Gutters, And Approaches

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 5% of the surface area has spalls and minor cracks.
6	Moderate Defects	Traffic is restricted no more than once a year for repairs. Between 5% and 20% of the surface area has spalls, cracks or other damage.
4	Serious Defects	Traffic is restricted no more than twice a year for repairs. Between 20% and 40% of the surface area has spalls, cracks and/or broken concrete.
2	Excessive Defects	Traffic is restricted more than two times a year for repairs. More than 45% of the surface area has spalls, cracks and/or broken concrete. Surface is uneven due to settlement.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Culverts And Bridges

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Traffic is not restricted and requires only preventive maintenance or minor repairs.
6	Moderate Defects	Traffic is restricted no more than once a year for repairs. Light rust or other corrosion present.
4	Serious Defects	Traffic is restricted no more than twice a year for repairs. Heavy rust or corrosion and/or dents present but will still support the designed load.
2	Excessive Defects	Traffic is restricted more than two times a year for repairs. Load limit must be reduced. Cracks at welds and/or corroded or rusted out metal.
0	Failed	Unusable, will not support traffic.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Signal Lights

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Equipment complies with current "state-of-the-art" technology.
8	Minor Defects	Equipment is fully operational with only preventive maintenance or minor repairs required. Some equipment may need to be upgraded to current "state-of-the art" technology.
6	Moderate Defects	Equipment is fully operational but needs repairs or timing adjustments no more than once a year.
4	Serious Defects	Equipment is operational but needs repairs or timing adjustments no more than twice a year. Spare or replacement parts are not readily available.
2	Excessive Defects	Equipment is not reliable and needs repairs or timing adjustments more than two times a year. Spare or replacement parts are not available and must be custom made.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Signs

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Requires preventive maintenance or minor repairs with only surface scratches. Signs are fully legible.
6	Moderate Defects	Poles are twisted or slightly bent and the signs have minor holes, but still legible.
4	Serious Defects	Poles and/or signs badly twisted or bent. Signs are faded and legibility is deteriorating.
2	Excessive Defects	Poles and/or signs badly twisted or bent. Signs are faded and are barely legible.
0	Failed	Unusable. Signs down or not legible.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: PAVEMENTS
Sub-Component: Street and Parking Lot Lighting

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Streets and Parking Lots are lighted to maximize safety, convenience, and energy efficiency.
8	Minor Defects	Lighting system is fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	Lighting system is fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded to maximize safety, convenience, and energy efficiency.
4	Serious Defects	Lighting system is operational but requires unscheduled repairs more than once a year. Safety and operational requirements may be compromised because of failures and a lack of adequate lighting.
2	Excessive Defects	Lighting system is not reliable because of the need for major repairs. Operational requirements are not being met.
0	Failed	Lighting system is unusable. Safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Site Work

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Requires only preventive maintenance or minor repairs.
6	Moderate Defects	Less than 10% of the grounds needs repair. Minor erosion is present.
4	Serious Defects	Between 20% and 30% of grounds needs repair. Moderate erosion is present.
2	Excessive Defects	Between 30% and 40% of grounds needs repair. Significant erosion is present.
0	Failed	Unusable. Over 50% of grounds needs repair. Erosion has undermined structures.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Landscaping

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Routine care has been performed on schedule and areas require only minor repairs.
6	Moderate Defects	Routine care is being performed but has not be according to a set schedule. Less than 10% of the vegetation needs replacing.
4	Serious Defects	Routine care is sporadic and set schedule is being ignored. Between 20% and 30% of the vegetation needs replacing.
2	Excessive Defects	No routine care is being performed. Between 30% and 40% of the vegetation needs.
0	Failed	Condition detract from the esthetics of the area. Over 50% of the vegetation needs replacing.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Area Lighting

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Crosswalks are lighted to maximize safety, convenience, and energy efficiency.
8	Minor Defects	Lighting system is fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	Lighting system fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded to maximize safety, convenience, and energy efficiency.
4	Serious Defects	Lighting system is operational but requires repairs more than once a year. Safety and operational requirements may be compromised.
2	Excessive Defects	Lighting system is not reliable because of the need for major repairs. Operational requirements are not being met.
0	Failed	Lighting system is unusable. Safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Fencing

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Requires only preventive maintenance or minor repairs.
6	Moderate Defects	Less than 10% of fencing needs repair. Some of the poles, wire or fabric is loose.
4	Serious Defects	Between 10% and 20% of fencing needs repair. Some of the poles are bent and the wire or fabric is loose or broken. Fence need painting or stain and some broken boards or rust is present.
2	Excessive Defects	Over 30% of the fencing needs repairs. Fence fabric and wire are rusted or missing, boards are loose or broken, and the poles are bent. Erosion is present around the pole. Security is compromised for short periods of time.
0	Failed	Unusable. Security in not being maintained.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Sidewalks, Structures and Miscellaneous Pads

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Sidewalks, structures and/or pads require only preventive maintenance or minor repairs. Less than 2% of the surface area is defective with only minor cracks. Pedestrian traffic is not restricted.
6	Moderate Defects	Between 5% and 10% of the sidewalks, structures and/or pads have spalls, cracks or other damage. Pedestrian traffic is restricted no more than once a year for repairs.
4	Serious Defects	Between 15% and 25% of the sidewalks, structures and/or pads have spalled, cracked or broken concrete. Pedestrian traffic is restricted no more than twice a year for repairs.
2	Excessive Defects	Over 30% of the sidewalks, structures and/or pads have spalled, cracked or broken concrete. Some settlement. Pedestrian traffic is restricted more than two times a year for repairs.
0	Failed	Unusable. Condition presents a safety hazard.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Drainage Ditches & Canals

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and has adequate capacity to meet demand.
8	Minor Defects	Preventive maintenance or minor repairs required. Less than 10% of the drainage ditch or culvert is clogged or shows signs of damage. Only minor capacity problems.
6	Moderate Defects	Between 10% and 25% of the drainage ditch or culvert is clogged or shows signs of damage. Flooding is experienced only during heavy rain fall.
4	Serious Defects	Between 25% and 50% of the drainage ditch or culvert is clogged or shows signs of damage. Serious capacity problems.
2	Excessive Defects	More than 50% of the drainage ditch or culvert is clogged or shows signs of damage.
0	Failed	Unusable. Life or major facility value at risk.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Inlets, Manholes, Catch Basins and Piping

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects and has adequate capacity to meet demand.
8	Minor Defects	Preventive maintenance or minor repairs required with a few minor leaks noted. Only minor capacity problems.
6	Moderate Defects	Significant minor leaks or a few major leaks noted. Flooding experienced only during heavy rain fall.
4	Serious Defects	Numerous major or minor leaks noted. Sections of pipe blocked. Serious capacity problems.
2	Excessive Defects	Several sections of pipe collapsed or blocked. Numerous major or minor leaks noted.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: PAVEMENTS AND GROUNDS SYSTEM
COMPONENT: GROUNDS
Sub-Component: Railroads

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Hazard level is <i>Negligible</i> with only preventive maintenance or minor repairs required.
6	Moderate Defects	Hazard level is <i>Negligible</i> . Rail operations have not been restricted but some minor tie replacement and rail alignment is required.
4	Serious Defects	Hazard level is <i>Marginal</i> . Rail operations have not been restricted but missing nuts, loose spikes, deteriorated ties, and minor rail defects require repairs.
2	Excessive Defects	Hazard level is <i>Critical</i> . Rail traffic is restricted and operating speed has been reduced.
0	Failed	Unusable. Hazard level is <i>Catastrophic</i> .

AIRFIELDS SYSTEM
(D)

INFRASTRUCTURE CONDITION STANDARD

AIRFIELDS SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
AIRFIELD PAVEMENTS	73.5%
Runways	(16.2%)
Taxiways	(20.3%)
Aircraft Parking Aprons	(24.3%)
Joint Sealant	(1.2%)
Overruns	(0.9%)
Pads - Hot Areas	(6.5%)
Shoulders	(4.1%)
AIRFIELD LIGHTING & NAVIGATION	22.6%
Airfield Lighting	(10.2%)
Air Navigation	(12.4%)
AIRFIELD SPECIALTIES	3.9%
Aircraft Arresting Systems	(3.1%)
Blast Deflectors, Revetments, etc.	(0.8%)
TOTAL	<hr/> 100.0%

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Runways

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The pavement condition index is 100.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 2% of the surface has minor cracks, spalls, depressions or other damage. The pavement condition index is at or above 70.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 5% and 20% of the surface area of the runway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 50.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 25% and 30% of the surface area of the runway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 30.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of the surface area of the runway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 10.
0	Failed	Unusable. The pavement condition index is at or below 5.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Taxiways

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The pavement condition index is 100.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 5% of the surface of the taxiway has minor cracks, spalls, depressions or other damage. The pavement condition index is at or above 70.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 5% and 20% of the surface of the taxiway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 50.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 25% and 30% of the surface of the taxiway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 30.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of the surface of the taxiway has cracks, spalls, depressions or other damage. The pavement condition index is at or above 10.
0	Failed	Unusable. The pavement condition index is at or below 5.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Aircraft Parking Aprons

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The pavement condition index is 100.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 5% of the surface has minor cracks, spalls, depressions or other damage. The pavement condition index is at or above 70.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 5% and 20% of the surface of the apron has cracks, spalls, depressions or other damage. The pavement condition index is at or above 50.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 25% and 30% of the surface area has cracks, spalls, depressions or other damage. The pavement condition index is at or above 30.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of the surface area has cracks, spalls, depressions or other damage. The pavement condition index is at or above 10.
0	Failed	Unusable. The pavement condition index is at or below 5.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Joint Sealant

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 5% of the joint seals are cracked or deteriorated. Sealant still prevents infiltration of surface water.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 10% and 15% of the joint seals are deteriorated or cracked. Slight indication of water infiltrating the base course.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 20% and 25% of the joint seals are deteriorated, cracked, or missing. Obvious indication of water infiltrating the base course.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 35% of the joint seals are deteriorated, cracked, or missing. Base course beginning to show sign of failure due to water infiltration.
0	Failed	Unusable. Sealant does not prevent infiltration of water.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Overruns

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 10% of the surface area has minor cracks or depressions.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 10% and 20% of the surface area has cracks or depressions.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 20% and 30% of the surface area has cracks, depressions or deteriorated asphalt.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of asphalt surface has alligator cracking or deteriorated asphalt.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Pads - Hot Areas

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The pavement condition index is 100.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 5% of the surface area has minor cracks, spalls, depressions or other damage. The pavement condition index is at or above 70.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 5% and 20% of the surface area has cracks, spalls, depressions or other damage. The pavement condition index is at or above 50.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 20% and 30% of the surface area has cracks, spalls, depressions or other damage. The pavement condition index is at or above 30.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of the surface area has cracks, spalls, depressions or other damage. The pavement condition index is at or above 10.
0	Failed	Unusable. The pavement condition index is at or below 5.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Shoulders

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Aircraft traffic is not restricted and requires only preventive maintenance or minor repairs. Less than 15% of the surface area of the shoulders has cracks, spalls, depressions or other damage.
6	Moderate Defects	Aircraft traffic is restricted no more than once a year for repairs. Between 15% and 30% of the surface area of the shoulders has cracks, spalls, depressions or other damage.
4	Serious Defects	Aircraft traffic is restricted no more than twice a year for repairs. Between 30% and 40% of the surface shoulders has cracks, spalls, depressions or other damage.
2	Excessive Defects	Aircraft traffic is restricted more than two times a year for repairs. Over 40% of the surface area shoulders has cracks, spalls, depressions or other damage.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Airfield Lighting

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. System complies with current "state-of-the-art" technology.
8	Minor Defects	Lighting system is fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	Lighting system is fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded with current "state-of-the-art" equipment to maximize safety and operational requirements.
4	Serious Defects	Lighting system is operational but requires unscheduled repairs more than once a year. Safety and operational requirements are compromised.
2	Excessive Defects	Lighting system is not reliable because of the need for major repairs. Some operational requirements are not being met.
0	Failed	Lighting system is unusable. Flight safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD PAVEMENTS
Sub-Component: Air Navigation

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. System complies with current "state-of-the-art" technology.
8	Minor Defects	Air navigation system is fully operational with only routine preventive maintenance or minor repairs required to preserve reliability.
6	Moderate Defects	Air navigation system is fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded with current "state-of-the-art" equipment to maximize safety and operational requirements.
4	Serious Defects	Air navigation system is operational but requires unscheduled repairs no more than twice a year. Flight safety and operational requirements may be compromised because of system deficiencies.
2	Excessive Defects	Air navigation system is not reliable because of the need for major repairs. Some operational requirements are not being met. Almost all of the equipment is obsolete.
0	Failed	Air navigation system is unusable. Flight safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD SPECIALTIES
Sub-Component: Aircraft Arresting Systems

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Aircraft arresting system is fully operational, requiring only routine preventive maintenance or minor repairs.
6	Moderate Defects	Aircraft arresting system is fully operational but requires unscheduled repairs no more than once a year. In some cases it should be upgraded with current "state-of-the-art" equipment.
4	Serious Defects	Aircraft arresting system is operational but requires unscheduled repairs no more than twice a year. Flight safety and operational requirements may be compromised because of system deficiencies.
2	Excessive Defects	Aircraft arresting system is not reliable because of the need for major repairs. Some operational requirements are not being met. Almost all of the equipment is obsolete.
0	Failed	Aircraft arresting system is unusable. Flight safety requirements are not being met.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: AIRFIELDS SYSTEM
COMPONENT: AIRFIELD SPECIALTIES
Sub-Component: Blast Deflectors, Revetments, etc.

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects.
8	Minor Defects	Items are fully operational and only require preventive maintenance or minor repairs.
6	Moderate Defects	Items are fully operational but aircraft traffic is restricted no more than once a year for repairs.
4	Serious Defects	Items are operational but aircraft traffic is restricted no more than twice a year for repairs.
2	Excessive Defects	Items are not reliable and aircraft traffic is restricted more than two times a year for repairs.
0	Failed	Items are unusable.

**WATER AND WASTEWATER
TREATMENT SYSTEM
(S)**

INFRASTRUCTURE CONDITION STANDARD

WATER AND WASTEWATER TREATMENT SYSTEM

<u>MAJOR COMPONENTS/ Sub-Components</u>	<u>Component Weight</u>
DOMESTIC WASTE WATER TREATMENT & DISPOSAL	33.1%
Chemical Feed Equipment	(4.3%)
Sludge Handling	(0.6%)
Mechanical Equipment	(5.7%)
Electrical Components/Controls/Monitoring	(3.6%)
Collection	(18.9%)
INDUSTRIAL WASTE WATER TREATMENT	29.3%
Chemical Feed Equipment	(2.1%)
Sludge Handling	(5.9%)
Grease Traps And Separators	(0.4%)
Mechanical Equipment	(4.2%)
Electrical Components/Controls/Monitoring	(1.9%)
Collection	(14.8%)
WATER SUPPLY & DISTRIBUTION	33.8%
Pipes, Valves & Fittings	(7.9%)
Elevated Storage Tanks	(8.8%)
Water Treatment	(8.5%)
Fire Pumps	(0.6%)
Fire Storage Tanks and Supply Lines	(1.8%)
Wells/Water Source	(5.5%)
Open Reservoirs	(0.6%)
Cathodic Protection	(0.1%)
SOLID WASTE DISPOSAL	3.8%
Landfill	(0.6%)
Incinerator	(1.1%)
Processing/Recycling/Composting Facility	(2.1%)
TOTAL	<hr/> 100.0%

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: DOMESTIC WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Chemical Feed Equipment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The system is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The system is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: DOMESTIC WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Sludge Handling

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The system is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The system is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: DOMESTIC WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Mechanical Equipment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The equipment is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The equipment is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: DOMESTIC WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Electrical Components/Controls/Monitoring

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The equipment is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The equipment is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 90% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems. More than 75% of required standby power and 90% of the required monitoring equipment and controls are installed and working.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: DOMESTIC WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Collection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational with leaks or cracks on no more than 10% of system. Several non-functioning valves and some corrosion are present.
4	Serious Defects	The system is operational with significant leaks or cracks on more than 10% of system. Infiltration/Inflow causes hydraulic overload at plant no more than four times per year.
2	Excessive Defects	The system is not reliable. Numerous major or minor system problems causes intermittent service. Infiltration/Inflow causes hydraulic overload at plant over four times per year. Major repair or replacement is required within two years. One or more safety or environmental deficiencies.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Chemical Feed Equipment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 90% capacity and experiences no more than one unscheduled outage per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than two unscheduled outages per year with significant process impairment. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than two unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-Component Sludge Handling

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The system is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The system is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-component: Grease Traps And Separators

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational but may be down for unscheduled repair no more than once every 6 months.
4	Serious Defects	The system is operational but may be down for unscheduled repair no more than twice every six months. Some systems are too small for the amount of fluids processed.
2	Excessive Defects	The system is not reliable and are down at least six times a year for unscheduled maintenance. Most are too small for the fluids processed and do not meet the requirements. One or more environmental deficiencies.
0	Failed	Traps and separators are not operational. Presents a severe environmental compliance problem.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Mechanical Equipment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The equipment is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The equipment is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Electrical Components/Controls/Monitoring

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The equipment is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The equipment is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 90% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems. More than 75% of required standby power and 90% of the required monitoring equipment and controls are installed and working.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year with significant process impairment. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: INDUSTRIAL WASTE WATER TREATMENT & DISPOSAL
Sub-Component: Collection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational with leaks or cracks on no more than 10% of system. Several non-functioning valves and some corrosion are present.
4	Serious Defects	The system is operational with significant leaks or cracks on more than 10% of system. Infiltration/Inflow causes hydraulic overload at plant no more than four times per year.
2	Excessive Defects	The system is not reliable. Numerous major or minor system problems causes intermittent service. Infiltration/Inflow causes hydraulic overload at plant over four times per year. Major repair or replacement is required within two years. One or more safety or environmental deficiencies.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Pipes, Valves & Fittings

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Elements are constructed with appropriate materials and adequate thrust constraints
8	Minor Defects	Preventive maintenance or minor repairs required. Annual failure rate at less than 1 per 5 miles of line. Some sticking valves.
6	Moderate Defects	Annual failure rate at less than 1 per 2 miles of line. Several inoperative, buried or lost valves.
4	Serious Defects	History of significant major leaks on between 10% and 20% of the elements. Several inoperative, buried or lost valves. Section of piping constructed with lead or other inappropriate material.
2	Excessive Defects	History of significant major leaks on over 20% of the elements. Major corrosion noted. Numerous non-functioning valves.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Elevated Storage Tanks

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new. Storage tanks and supply lines provide adequate water and pressure.
8	Minor Defects	Storage tanks and supply lines are fully functional with only preventive maintenance or minor repairs required.
6	Moderate Defects	Storage tanks and supply lines are fully functional but exterior of tanks need to be cleaned and painted to prevent rust and corrosion of tanks. Interior of the storage tanks need to be drained and cleaned.
4	Serious Defects	Storage tanks and supply lines are functional but capacity may be inadequate. Tanks have several leaks with visual corrosion. Seals and joints need to be repaired or replaced. Water is low in tanks and adequate pressure for service lines cannot be maintained.
2	Excessive Defects	Storage tanks and lines are damaged and not reliable. Water pressure must be reduced for service tanks or distribution lines to keep in service.
0	Failed	Storage tanks and lines are not usable and will not hold water or pressure.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-component: Water Treatment

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The equipment is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The equipment is fully operational with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational but may be down no more than once a year for unscheduled maintenance or repairs.
4	Serious Defects	The equipment is operational but may be down no more than twice a year for unscheduled maintenance or repairs. Components may be leak and the valves need packing.
2	Excessive Defects	The equipment is not reliable and is down more than twice a year for unscheduled maintenance or repairs.
0	Failed	Equipment is not operational.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Fire Pumps

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Pumps operate properly on demand and provide distribution of water or agent as required.
8	Minor Defects	Pumps operate properly, however regular preventive maintenance is required to keep equipment operational.
6	Moderate Defects	Pumps operate properly but require minor replacement of leaking seals and worn parts.
4	Serious Defects	Pumps operate properly but are occasionally off line for repair of seals. Diaphragms are damaged or other parts are broken.
2	Excessive Defects	Pumps are seldom in service due to damaged or worn parts. Replacement parts are limited or not available. Distribution of water or agent is restricted.
0	Failed	Pumps are not operational and equipment is obsolete or not repairable. Pumps must be replaced for mission accomplishment.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Fire Storage Tanks And Supply Lines

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Storage tanks and supply lines are available to provide water and pressure as required.
8	Minor Defects	Storage tanks and lines are available but require preventive maintenance or minor repair.
6	Moderate Defects	Storage tanks and lines are available for agent; however, some joints have minor leaks and need repair. Storage tanks need to be drained and cleaned. Exterior of tanks need to be cleaned and painted to prevent rust and corrosion of tanks.
4	Serious Defects	Storage tanks and lines are available; however, tanks and lines are leaking water with visual corrosion. Seals and joints need to be repaired or replaced. Water is low in tanks and adequate pressure for service lines cannot be maintained.
2	Excessive Defects	Storage tanks and lines are damaged or severely corroded. Water pressure is reduced for service tanks and distribution lines require extensive repair or replacement to provide adequate service.
0	Failed	Storage tanks and lines are damaged and will not hold water or provide pressure. Replacement of tanks and sections of damaged lines is required.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Wells/Water Source

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The equipment is operational at 90% capacity and experiences no more than one unscheduled outage per year with little or no process impairment. Only minor safety or compliance problems.
4	Serious Defects	The equipment is operational but only at 85% to 95% capacity and experiences no more than two unscheduled outages per year. Major repair or replacement needed within two years.
2	Excessive Defects	The equipment is not reliable and operates at less than 85% capacity. More than two unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems. Has less than 80% of the expected yield.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Open Reservoirs

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. Open reservoirs are available for drafting and water supply as necessary.
8	Minor Defects	Open reservoirs are available for water supply, however preventive maintenance is required to clear weeds and debris to allow drafting operations.
6	Moderate Defects	Open reservoirs for water supply are available but require some repair and periodic inspection to ensure access for vehicles to draft safely. Debris must be cleared from water to prevent damage to pumps and equipment.
4	Serious Defects	Open reservoirs are available however water level is low and drafting operations would cause damage to pumps. Dikes are unsafe for vehicles. Weeds and debris prevent drafting operation.
2	Excessive Defects	Open reservoirs are available however water level is low or reservoir is empty. Weeds are overgrown and will plug draft lines. Dikes are washed out, making vehicle access impossible.
0	Failed	Open reservoirs are damaged and dry. Dikes leak and will not hold water. Vehicles cannot access drafting areas. Reservoirs are cluttered with debris and grown over with weeds.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: WATER SUPPLY & DISTRIBUTION
Sub-Component: Cathodic Protection

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. All underground pipelines and tanks that require cathodic protection are protected with an operable system that will register the proper resistance when checked.
8	Minor Defects	The system is fully operational with only preventive maintenance or minor repairs required. Cathodic protection is installed on all underground pipelines and tanks that require it.
6	Moderate Defects	The system is operational but some repairs are required. More than 80% of the underground pipelines and tanks that require protection have cathodic protection installed.
4	Serious Defects	The equipment is operational but major repairs are required. More than 50% of the underground pipelines and tanks that require protection have cathodic protection installed.
2	Excessive Defects	Some of the equipment is inoperable and major repairs or replacement are required. More than 25% of the underground pipelines and tanks that require it have adequate cathodic protection.
0	Failed	Equipment is unusable. Less than 25% of the underground pipelines and tanks have adequate protection.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: SOLID WASTE DISPOSAL
Sub-Component: Landfills

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The operation is efficient with ample capacity. All necessary monitoring and controls are in place with no safety or environmental compliance problems.
8	Minor Defects	The landfill has a capacity for more than ten years with only routine preventive maintenance or minor repairs required. No safety or environmental compliance problems.
6	Moderate Defects	The landfill has a capacity for less than ten years but is experiencing no more than one unscheduled problem per year. There is little or no process impairment. Only minor safety or compliance problems and 90% or more of monitoring and controls in operation.
4	Serious Defects	The landfill has a capacity for less than five years but is experiencing no more than two unscheduled problem per year. Only minor safety or compliance problems and less than 90% of the monitoring and controls in operation.
2	Excessive Defects	The landfill has a capacity for less than two years and is experiencing more than two unscheduled problem per year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	The landfill is not usable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: SOLID WASTE DISPOSAL
Sub-Component: Incinerator

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The system is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The system is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The system is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems and 90% or more of monitoring and controls in operation.
4	Serious Defects	The system is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The system is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	Unusable.

INFRASTRUCTURE CONDITION STANDARD

SYSTEM: WATER AND WASTEWATER TREATMENT SYSTEM
COMPONENT: SOLID WASTE DISPOSAL
Sub-Component: Processing/Recycling/Composting Facility

<u>CONDITION RATING</u>	<u>GENERIC EVALUATION</u>	<u>CONDITION STANDARD MEASUREMENT</u>
10	New Condition	Like new with no defects. The facility is operating efficiently with ample capacity, and no safety or environmental compliance problems.
8	Minor Defects	The facility is fully operational at full capacity with only routine preventive maintenance or minor repairs required.
6	Moderate Defects	The facility is operational at 95% capacity and experiences no more than two unscheduled outages per year with little or no process impairment. Only minor safety or compliance problems and 90% or more of monitoring and controls in operation.
4	Serious Defects	The facility is operational but only at 85% to 95% capacity and experiences no more than three unscheduled outages per year. Some safety or compliance problems exist. Major repair or replacement needed within two years.
2	Excessive Defects	The facility is not reliable and operates at less than 85% capacity. More than three unscheduled outage are experienced per year resulting process impairment. Major repairs or replacement is required within one year. One or more unacceptable safety risks or environmental compliance problems.
0	Failed	The facility is unusable.