

Measuring the Effectiveness of Risk Mitigation Strategies



University of Massachusetts
Amherst • Boston • Dartmouth • Lowell • Medical School • UMassOnline



Agenda

Please note: throughout presentation, all underlined text indicates there is a link to additional or source information

- UMASS System Overview
- UMASS Systemwide ERM Program Overview
- UMASS ERM Risk Assessment Process and Systemwide Risk Registry
- Moving Beyond Risk Assessment
 - MATRX Overview
 - Mitigation Assessment Values and Calculations
 - Results
 - Demo
 - Stakeholder Engagement
 - Results from Pilot
- Conclusion and Take Aways
- Questions

Overview of the University of Massachusetts System

UMASS System Overview

Five undergraduate & graduate campuses

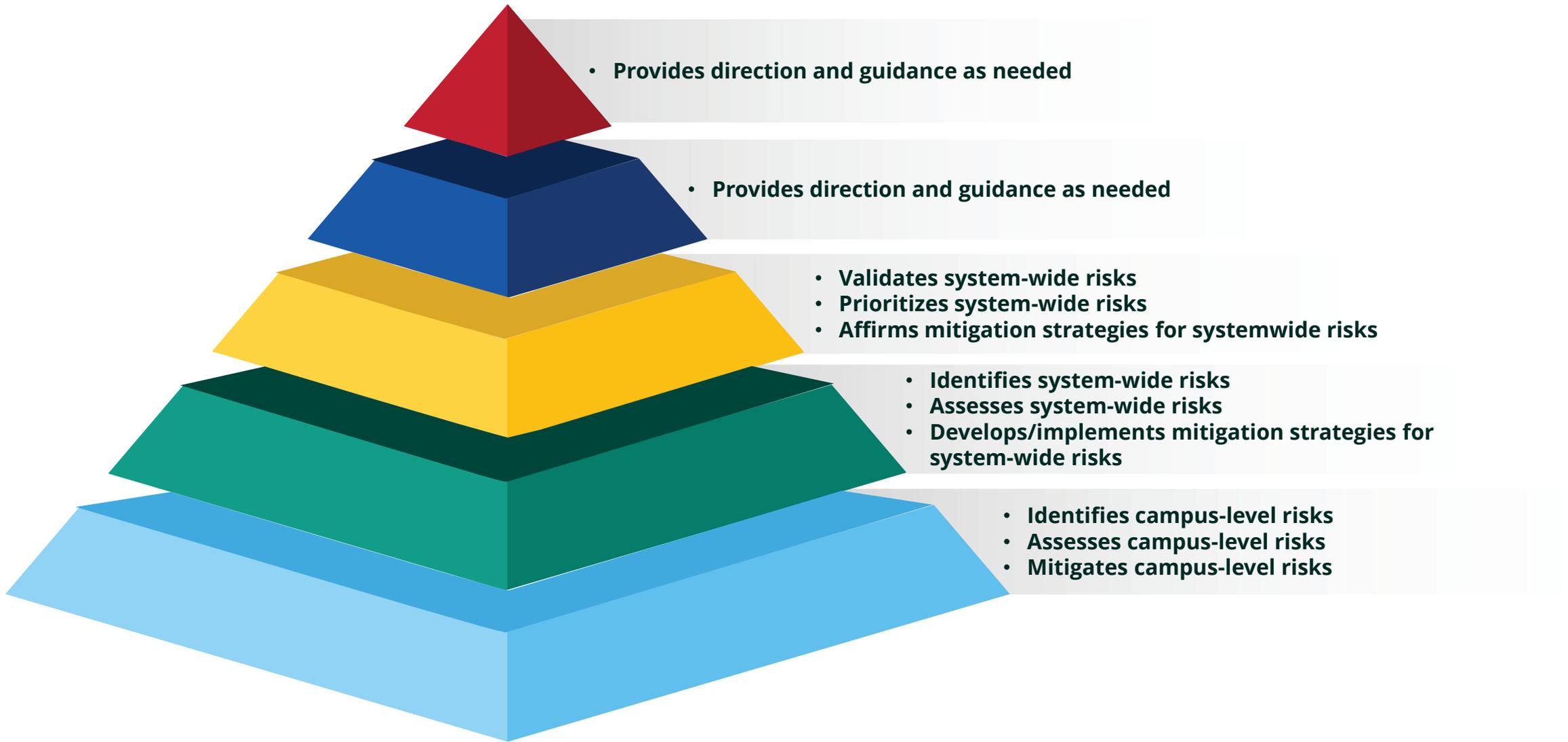
- Medical School
- Law School
- 75,000 students
- 18,000 new graduates annually

- Third-largest research university in Massachusetts (\$813M)
- Fourth-largest research university in New England

- Annual budget of \$3.8B
- Responsible for \$7.5 B in overall economic impact across Massachusetts

Third largest employer in Massachusetts with more than 24,000 employees

Systemwide Enterprise Risk Management Program



Systemwide ERM Program Cycle

- Proactively identify risks ***across the University***
- Assess the potential *systemwide* impact of risks
- Prioritize risks across the University
- Document and assess mitigation strategies
- Monitor risks and risk mitigation actions
- Regularly report updates on program

Two-Year ERM Program Cycle



How the Systemwide ERM Program Functions at UMass



- Identify and assess risks with systemwide implications
- Support informed decision-making
 - Transparency of information/activity
 - Normalized review/prioritization of risk
- Facilitate systemwide coordination on risk identification and assessment
- Assist in identifying risk owners
- Facilitate coordination of mitigation activities for crisis response
- Facilitate the assessment of effectiveness of mitigation activities on risk



- Own risk
- Own risk mitigation strategies
- Implement risk mitigation strategies
- Own compliance review or monitoring
- Own campus ERM programs or plans

Risk Assessment Process and Systemwide Risk Registry

Risk Assessment Process

- Focused on systemwide impacts
- Evaluates **inherent** exposure of the University to the risk
 - Does **not** account for mitigation strategies
 - Generates an Inherent Risk Score for each risk
- Rates risks across three factors
 - Values are assigned to each rating
 - Likelihood: Could the University system experience this risk?
 - Consequence: How much would the University system be impacted by this risk?
 - Service/Operations Disruption
 - Financial
 - Legal/Compliance
 - Workforce
 - Reputation
 - Life Safety
 - Urgency: How soon does the University system need to prioritize this risk?

Risk Assessment – Likelihood Factor

What is the likelihood the University system could experience this risk?

Assessor chooses from the most pertinent column

| Rating | Description | OR | Probability of Occurrence | OR | Rate of Occurrence |
|---------------------------------------|--|----|---------------------------|----|-----------------------|
| 4 Certain or Almost Certain | HIGH - Almost certain to occur, expected in most circumstances | OR | >75% | OR | more than 2x per year |
| 3 Likely | MEDIUM HIGH - Likely to occur or will probably occur | | 50 to 75% | | 1-2x per year |
| 2 Possible | MEDIUM - Possible, this could occur | | 25 to 50% | | once every 2-5 years |
| 1 Unlikely | LOW - Unlikely, not expected to occur | | Up to 25% | | more than 5 years |

Risk Assessment Tool – Consequence Factor

How much would the University system be impacted by this risk?

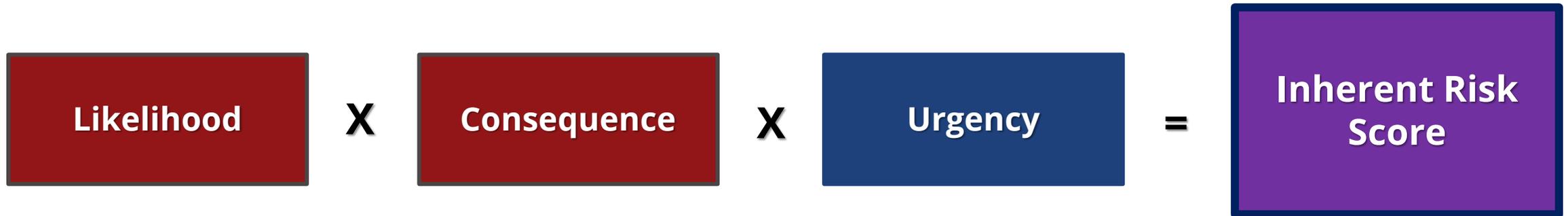
| Rating | Service Disruption, Process Impact on Operations | Financial Impact | Legal / Compliance | Workforce | Reputation | Life Safety | Rating |
|-----------------|---|--|--|---|--|--|---------------------------------------|
| 4 High | Serious disruption to or failure of service <i>AND/OR</i> Significant impacts to more than two campus | State appropriation reduction of more than 15 percent <i>AND/OR</i> Loss of revenue or increase in expenses of greater than 15 percent or combination of both <i>AND/OR</i> Need to use stabilization fund <i>AND/OR</i> Impacts to all campuses | Increased state or federal regulatory scrutiny for additional campus(es) <i>AND/OR</i> External agency sanctions such as debarment or civil and/or criminal liability <i>AND/OR</i> Litigation exposure with significant financial (\$10M+), reputational or precedent exposure <i>AND/OR</i> Substantial audit findings | Inability to recruit or retain employees with essential knowledge, skills and abilities <i>AND/OR</i> Work culture is defined by excessive internal conflict or widespread negativity <i>AND/OR</i> Inability to collaborate across the system or limited information sharing and cooperation <i>AND/OR</i> Low level of trust among colleagues | Negative national media coverage or negative social media activity ("viral") for multiple days <i>AND/OR</i> Tangible, long-term impacts to enrollment (more than one cycle), philanthropy and public support <i>AND/OR</i> Significant personnel actions <i>AND/OR</i> Widespread internal reaction | Fatality or permanent disability of one or more people | 4 High |
| 3 Medium | Moderate disruption to service <i>AND/OR</i> Significant impact to one campus | State appropriation reduction of 10-15 percent <i>AND/OR</i> Loss of revenue or cost increase of 5-10 percent, or combination of both (est. \$175M - \$350M) <i>AND/OR</i> Impacts to BDL or UMA or UMMS | Restrictions or requirements placed on the University's operational activities <i>AND/OR</i> Substantial (\$1M+) regulatory fines and/or response costs <i>AND/OR</i> Moderate audit findings <i>AND/OR</i> Litigation with substantial financial (\$1M - \$10M), reputational or precedent exposure | Difficulty recruiting or retaining employees with essential knowledge, skills and abilities <i>AND/OR</i> Work culture experiences frequent internal conflict or significant <i>AND/OR</i> Significant obstacles to system-wide collaboration <i>AND/OR</i> Decreased information sharing in many circumstances | Negative regional (northeast) media coverage or some negative social media activity <i>AND/OR</i> Tangible, short-term impacts to enrollment (one cycle), philanthropy and public support <i>AND/OR</i> Significant internal reaction | Serious injury of one or more people | 3 Medium |
| 2 Low | Minor impact on service <i>AND/OR</i> Some impact to more than one campus | Between \$5M and 1 - 5 percent revenue loss or expense increase or combination of both (est. \$5M to \$175M impact) <i>AND/OR</i> Impacts to up to two campuses | Regulatory fines (less than \$1M) <i>AND/OR</i> Minor audit findings <i>AND/OR</i> Litigation with financial (less than \$1M), reputational or precedent exposure <i>AND/OR</i> Internally-imposed consequences or requirement for formal corrective action | Minor impact to recruitment or retention <i>AND/OR</i> Work culture experiences some internal conflict or negativity <i>AND/OR</i> Challenges with system-wide collaboration <i>AND/OR</i> Decreased information sharing and cooperation in limited circumstances | Negative local media coverage or minimal social media activity <i>AND/OR</i> Moderate on-campus/internal reaction | Minor injury to more than one person | 2 Low |
| 1 Negligible | Annoyance | Less than \$5M impact | No to minimal impact | No to minimal impact to recruitment or retention <i>AND/OR</i> No to minimal impact to workplace culture <i>AND/OR</i> No to minimal impact to system-wide collaboration or information sharing | No to minor internal reaction | No impact or minor injury to individual | 1 Negligible |
| Rating | 3 | 3 | 3 | 3 | 3 | 3 | Total Consequence Rating 18 |

Risk Assessment Tool – Urgency Factor

How soon do we need to prioritize this risk?

| Level | | Timeframe |
|-------|----------|---------------------------|
| 3 | High | Within the next 12 months |
| 2 | Moderate | 1-3 years |
| 1 | Low | More than 3 years |

Inherent Risk Score Calculation



- Assessed by ERM Working Group
- Assessed by ERM Executive Committee

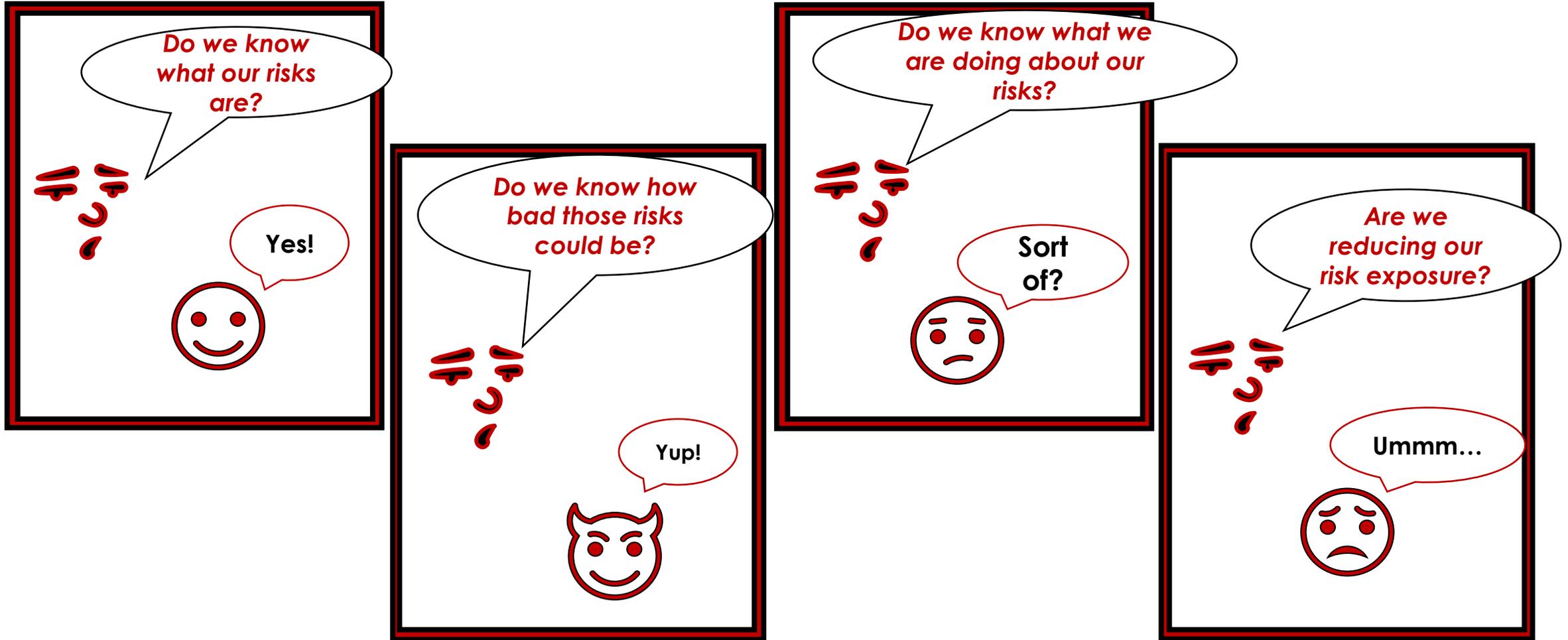
FY2022 Systemwide Risk Registry

| Rank | Risk |
|------|--|
| 1 | Enrollment |
| 2 | Information Security |
| 3 | Financial Sustainability |
| 4 | Facilities and Deferred Maintenance |
| 5 | Student Health & Mental Health Support |
| 6 | Vendor Risk Management |
| 7 | Attract, Recruit, Retain Faculty and Staff |
| 8 | International Activities |
| 9 | Information Privacy |
| 10 | Diversity, Equity, Inclusion and Accessibility |

| Rank | Risk |
|------|---|
| 11 | All Hazards Planning & Response Capabilities |
| 12 | Multi-State Payroll Tax |
| 13 | Labor Relations |
| 14 | Data Management |
| 15 | Research |
| 16 | Multi-State Business Tax |
| 17 | Sexual Assault Policies & Response Procedures |
| 18 | IT Disaster Recovery |
| 19 | Continuity Planning |
| 20 | Environmental Health, Public Health, & Safety Regulations |

| Rank | Risk |
|------|--|
| 21 | Alcohol and Substance Abuse |
| 22 | Crisis Communications |
| 23 | Immigration Rules and Regulations |
| 24 | Fraud, Waste, and Abuse |
| 25 | Uninsured Loss |
| 26 | Employment Laws and Regulations |
| 27 | NCAA Regulations |
| 28 | Policies and Procedures Regarding Minors on Campus |
| 29 | Academic Quality and Standards |
| 30 | Oversight of Student Organizations |

Reality Sets In



Moving Beyond Risk Assessment

Goals

- Document risk mitigation strategies for transparency and enhance our common operating picture
- Demonstrate progress – or lack of progress - in reducing our risk exposure
- Correlate assessment of risk mitigation strategies to a risk's Inherent Risk Score
- Achieve all of this through a single, user-friendly process and tool

Approach

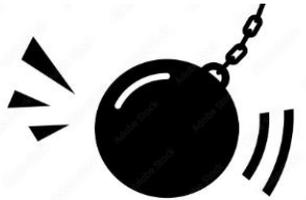
- Research publicly available tools
 - Few available
 - Existing tools involved two processes to assess the impact of mitigation on a risk
 - Stand alone process to evaluate risk mitigation strategy
 - Separate re-evaluation of risk against the mitigation strategy
- Sought to develop our own methodology and tool
 - Engaged with a consultant to provide guidance
 - Developed the tool in-house





Overview

Mitigation Assessment Aligns with Risk Assessment

| Factor | Risk Assessment Process <i>Evaluates impact of risk on the University</i> | Risk Mitigation Assessment Process <i>Evaluates impact of mitigation on risk exposure</i> |
|---|---|---|
|  |  |  |
| Consequence | Assesses impact a risk has on the University system across six risk exposure categories | Assesses how much the mitigation strategy reduces exposure across six categories of impact |
| Likelihood | Assesses the likelihood of the risk impacting the University system | Assesses whether the mitigation strategy influences the likelihood of the risk impacting the University |
| Urgency | Identifies how soon the University needs to prioritize the risk | |

Methodology

Individual Effectiveness

Measure the effectiveness of an *individual* mitigation strategy on reducing risk exposure

Comparative Effectiveness

Compare the effectiveness of *multiple* mitigation strategies on reducing risk exposure

Aggregate Effectiveness

Measure the *aggregate* effectiveness of all risk mitigation strategies on reducing risk exposure

MATRX Follows a Three-Step Process



- 1** Capture Mitigation Strategy Data
- 2** Assess Impact of Mitigation Strategy on Risk's Consequence
- 3** Assess Impact of Mitigation Strategy on Risk's Likelihood

Step 1: Capturing Mitigation Strategy Data



All Data is provided by mitigation partner(s) conducting the assessment of the mitigation strategy.

| Data Point | | Description |
|--|-----------------------------|---|
| Title | | <ul style="list-style-type: none"> Title of mitigation strategy being documented/assessed |
| Description | | <ul style="list-style-type: none"> Brief description of mitigation strategy |
| For These Data Points, Choose from Dropdown Menu | Type | <ul style="list-style-type: none"> Everyday/operational/regularly occurring activity Project/initiative-based activity(finite timeframe) |
| | Status | <ul style="list-style-type: none"> Proposed (not yet approved/funded) Planned (approved/funded, but not yet implemented) Ongoing Complete |
| | Implementation Level | <ul style="list-style-type: none"> Fully: Mitigation strategy is fully implemented Partially: Mitigation strategy is not yet implemented at full capacity N/A: Not applicable or not yet implemented |

Step 1: Capturing Mitigation Strategy Data



Enlarged Screenshot

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A |

Step 2: Assessing Mitigation Strategy's Impact on the Risk's Consequences



Evaluation

Evaluate the degree of effectiveness the mitigation strategy has on a risk within each risk consequence category:

- Service Disruption/Impact to Operations
- Finance
- Legal/Compliance
- Workforce
- Reputation
- Life Safety

These consequence categories align with the consequence categories used in the risk assessment process.

Rating Options

What effect does or would the mitigation strategy have on this risk category?

| Rating | Description |
|----------------------------|--|
| Significant Effect | Greatly reduces the University's exposure in this risk category |
| Moderate Effect | Somewhat reduces the University's exposure in this risk category |
| Little to No Effect | Barely or does not reduce the University's exposure in the risk category |
| Adverse Effect | Creates additional/increases exposure in the risk category |

Step 2: Assessing Mitigation Strategy's Impact on the Risk's Consequences



Enlarged Screenshot

| Consequence Ratings | | | | | |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Negligible |
| Mitigation Strategy Rating (Select) | Mitigation Strategy Rating (Select) | Mitigation Strategy Rating (Select) | Mitigation Strategy Rating (Select) | Mitigation Strategy Rating (Select) | Mitigation Strategy Rating (Select) |
| Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect |
| Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect |
| Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect |
| Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect |

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A |

Step 3: Assessing Mitigation Strategy's Impact on Risk's Likelihood



Evaluation

Evaluate whether the likelihood of the risk occurring has been impacted as a result of the risk mitigation strategy

Rating Options

| <i>Does or would this mitigation strategy impact the likelihood of this risk occurring?</i> | |
|---|---|
| Rating | Description |
| Decreases Likelihood | Mitigation strategy has decreased the likelihood that the risk will occur (made it better) |
| No Impact on Likelihood | Mitigation strategy has made no impact on the likelihood that the risk will occur (neutral) |
| Increases Likelihood | Mitigation strategy has increased the likelihood that the risk will occur (made it worse) |

Step 3: Assessing Mitigation Strategy's Impact on the Risk's Likelihood

Enlarged Screenshot

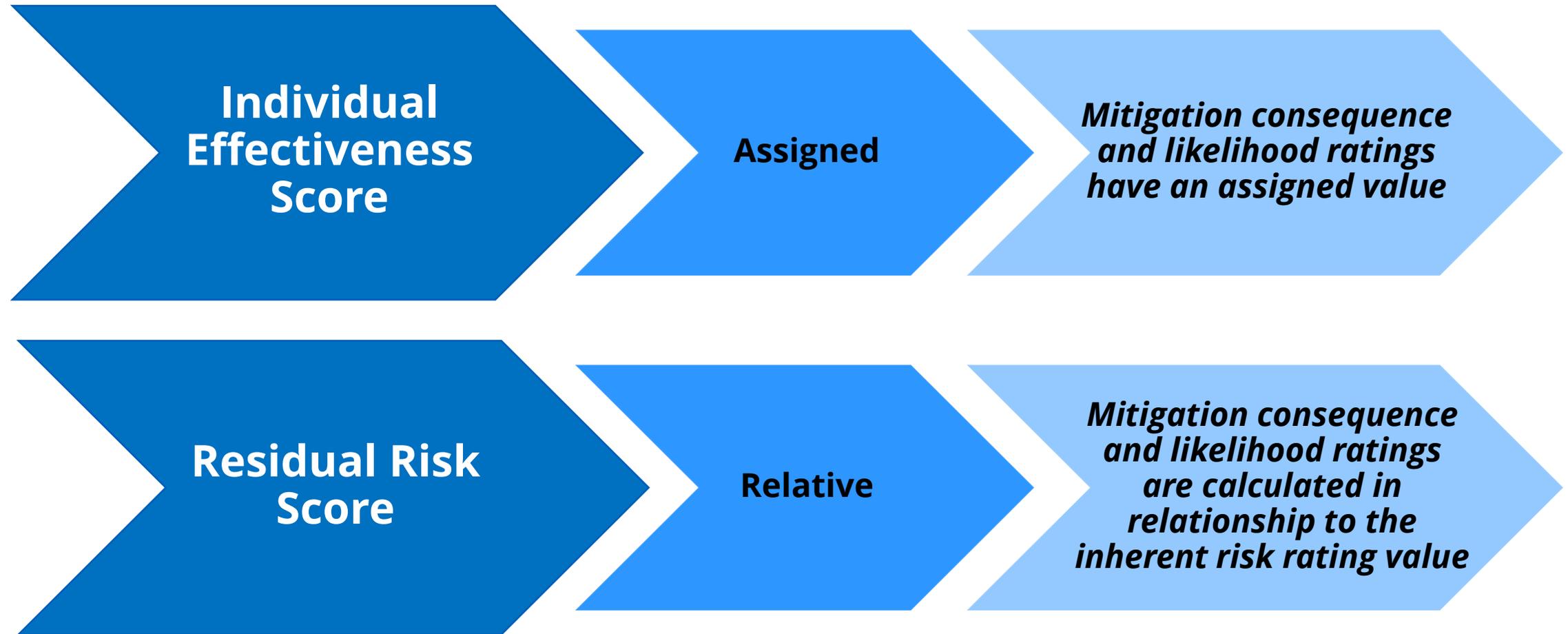


| Consequence Ratings | | | | | | Likelihood Rating |
|--|---------------------------|------------------------------|---------------------------|---------------------------|----------------------------------|-------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Negligible | |

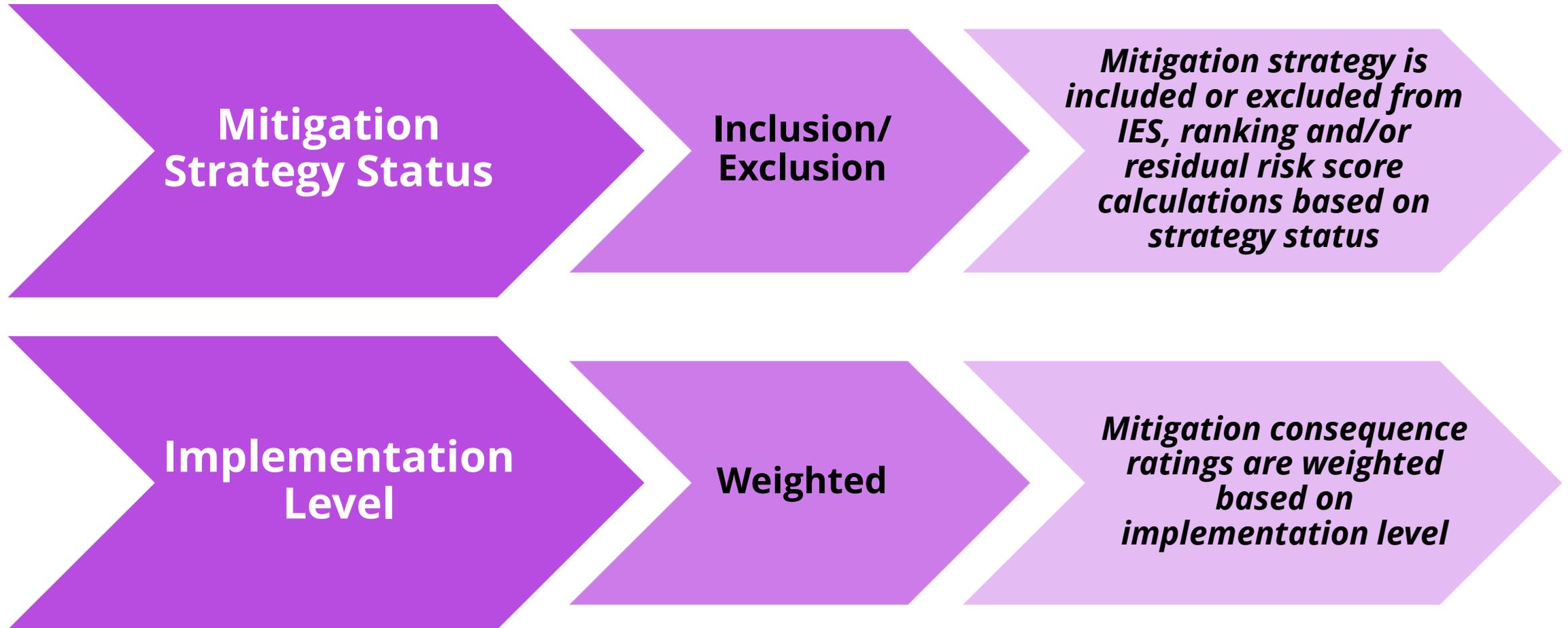
| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change |

Mitigation Assessment Values and Calculations

Mitigation Assessment Values are Based on Rating and Type of Calculation



Mitigation Assessment Scoring is Impacted by Mitigation Strategy Status and Implementation Level



Mitigation Assessment Scoring is Impacted by Mitigation Strategy Status and Implementation Level

Mitigation Strategy Status

Implementation Level

| Mitigation Strategy Status | Is the Mitigation Strategy Included in the Calculation? | | |
|----------------------------|---|----------|---------------------|
| | Individual Effectiveness Score (IES) | IES Rank | Residual Risk Score |
| Ongoing | Included | Included | Included |
| Completed | Included | Included | Included |
| Planned | Included | Included | Excluded |
| Proposed | Excluded | Excluded | Excluded |

| Mitigation Implementation Level | Are the Mitigation Strategy Ratings Weighted? | |
|---------------------------------|---|---------------------|
| | Individual Effectiveness Score | Residual Risk Score |
| Fully | No | No |
| Partially | Yes | Yes |
| N/A | No | No |

Result #1: Individual Effectiveness Score



The higher the score, the more effective the mitigation strategy

| Consequence Ratings | | | | | | Likelihood Rating |
|--|---------------------------|------------------------------|---------------------------|---------------------------|------------------------------|------------------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Likely |

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating | Individual Effectiveness Score |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--------------------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases | 34 |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases | 14 |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change | 30 |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change | N/A |

Result #1: Individual Effectiveness Score



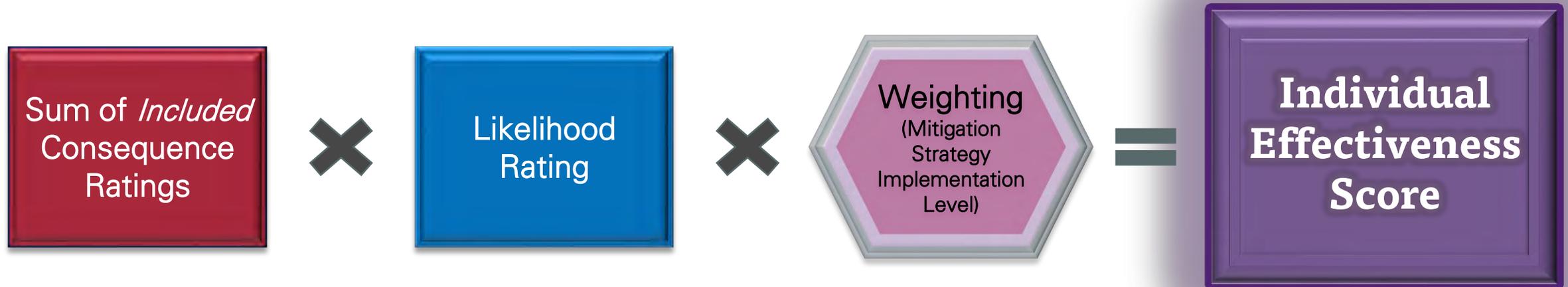
Values are assigned based on rating

| Consequence Ratings | | | | | | Likelihood Rating |
|--|---------------------------|------------------------------|---------------------------|---------------------------|------------------------------|------------------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Likely |

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating | Individual Effectiveness Score |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--------------------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | 4 | 2 | 3 | 2 | 2 | 2 | 3 | 34 |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | 2 | 1 | 4 | 2 | 3 | 2 | 1 | 14 |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | 3 | 2 | 2 | 4 | 2 | 2 | 2 | 30 |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Individual Effectiveness Score Calculation

- The Consequence Rating Values for Individual Effectiveness Score Calculations are a set value that are separate from the ratings from the Inherent Risk Score
- Each of the Consequence and Likelihood Ratings are multiplied by the Implementation Level before being multiplied and rounded to the nearest whole number for the Individual Effectiveness Score



Result #2A: Mitigation Strategy Rank



Mitigation strategies are ranked based on Individual Effectiveness Score

| Consequence Ratings | | | | | | Likelihood Rating |
|--|---------------------------|------------------------------|---------------------------|---------------------------|------------------------------|------------------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Likely |

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating | Individual Effectiveness Score | Individual Mitigation Strategy Rank |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--------------------------------|-------------------------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases | 34 | 1 |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases | 14 | 3 |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change | 30 | 2 |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change | N/A | N/A |

Result #2B: Consequence Category Comparison



Effectiveness of mitigation strategies can be compared within each consequence category

| Consequence Ratings | | | | | | Likelihood Rating |
|--|---------------------------|------------------------------|---------------------------|---------------------------|------------------------------|------------------------------|
| Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | |
| Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: Likely |

| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating | Individual Effectiveness Score | Individual Mitigation Strategy Rank |
|----------------------------|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|--------------------------------|-------------------------------------|
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases | 34 | 1 |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases | 14 | 3 |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change | 30 | 2 |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change | N/A | N/A |

Result #3: Residual Risk Score



The lower the score, the more effective the mitigation strategies are collectively

| | | Consequence Ratings | | | | | | Likelihood Rating | | | | |
|--|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| Service Disruption, Process Impact on Operations | F | <u>Inherent Risk Score</u> | | | <u>Residual Risk Score</u> | | | | | | | |
| Inherent Risk Rating: Medium | Inh | 90 | | | 75 | | | Inherent Risk Rating: Likely | | | | |
| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating |
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change |
| | | | | | | Average |

Result #3: Residual Risk Score



Values are relative to the inherent risk ratings

| | | Consequence Ratings | | | | | | Likelihood Rating | | | | |
|--|---------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------|
| Service Disruption, Process Impact on Operations | F | <u>Inherent Risk Score</u> | | | <u>Residual Risk Score</u> | | | | | | | |
| Inherent Risk Rating: Medium | Inh | 90 | | | 75 | | | Inherent Risk Rating: Likely | | | | |
| Mitigation Strategy Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Mitigation Strategy Rating (Select) | Mitigation Strategy Likelihood Rating |
| 1 | Strategy 1 | Description | Operational | Ongoing | Partially | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreases |
| 2 | Strategy 2 | Description | Project-Based | Planned | N/A | Little to No Effect | Adverse Effect | Significant Effect | Little to No Effect | Moderate Effect | Little to No Effect | Increases |
| 3 | Strategy 3 | Description | Project-Based | Completed | Fully | Moderate Effect | Little to No Effect | Little to No Effect | Significant Effect | Little to No Effect | Little to No Effect | Does Not Change |
| 4 | Strategy 4 | Description | Project-Based | Proposed | N/A | Significant Effect | Little to No Effect | Little to No Effect | Little to No Effect | Moderate Effect | Little to No Effect | Does Not Change |
| | | | | | | Average |

Residual Risk Score Calculation

- The Mitigation values for each consequence rating are relative to the inherent consequence rating
- The inherent Urgency Value is used for the calculation
- Each of the Consequence and Likelihood Rating are multiplied by the Implementation Level



Screenshot



| Risk Data | |
|---------------------------|---|
| Risk Name | Financial Sustainability |
| Risk Rank | 3 |
| Risk Description | Inability to adapt the University's business model to ensure financial sustainability, mitigate risk, and adjust to changing circumstances that influence funding or revenue. |
| Responsible Department(s) | A&F (UMPO and campuses) Budget Controllers HR |

| Risk Score Data | |
|---------------------|-----|
| Inherent Risk Score | 144 |
| Residual Risk Score | 96 |

| Quick Links | |
|--------------------------------------|---|
| A. Table of Contents | C. Reference - Consequence Assessment |
| B. Instructions | D. Reference - Likelihood Rating |

Risk Mitigation Strategy Assessment Table

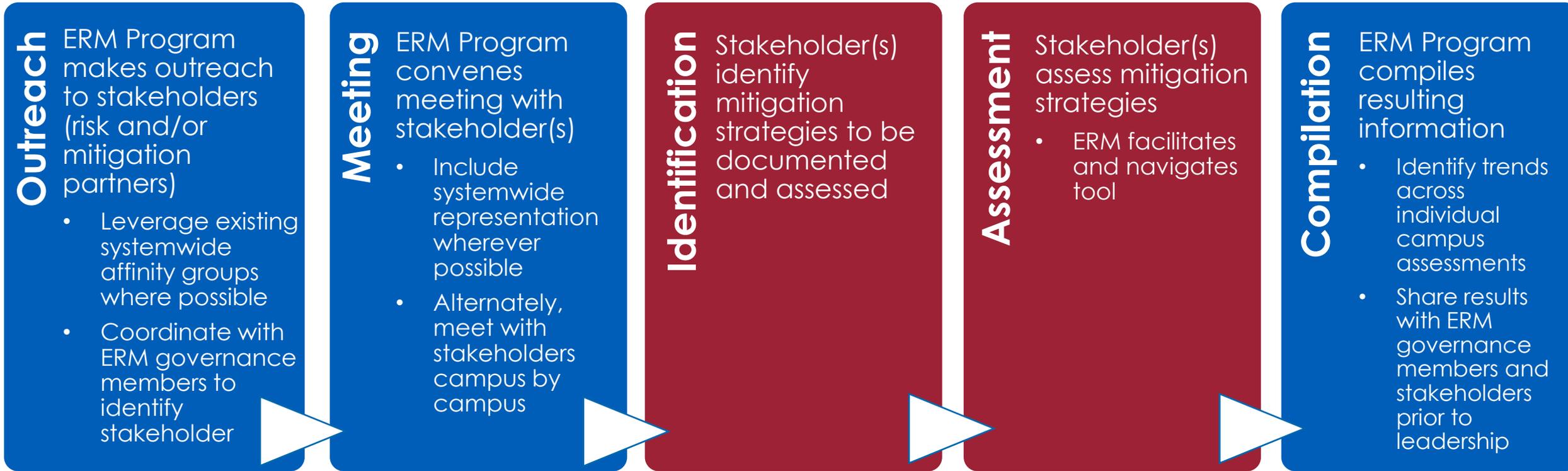
| Mitigation Strategy Reference Number | Mitigation Strategy Title | Mitigation Strategy Description | Mitigation Strategy Type | Mitigation Strategy Status | Implementation Level | Consequence Ratings | | | | | | Individual Effectiveness Score | Individual Mitigation Strategy Rank | |
|--------------------------------------|--|--|--------------------------|----------------------------|----------------------|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| | | | | | | Service Disruption, Process Impact on Operations | Financial | Legal/ Compliance | Workforce | Reputation | Life Safety | | | Likelihood Rating |
| | | | | | | Inherent Risk Rating: Medium | Inherent Risk Rating: Medium | Inherent Risk Rating: Low | Inherent Risk Rating: Medium | Inherent Risk Rating: High | Inherent Risk Rating: Negligible | Inherent Risk Rating: Likely | | |
| | | | | | | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | Mitigation Strategy Rating (select) | | |
| 11 | State Financial Support | Continual advocacy to state Legislature and Administration regarding state appropriation by developing and providing rational budget requests and ensuring fiscal transparency | Project-Based | Ongoing | Fully | Significant Effect | Significant Effect | Little to No Effect | Significant Effect | Moderate Effect | Little to No Effect | Decreased | 57 | 1 |
| 13 | State Funding of CBA Increases | Monitor and ensure state funding for CBA increases wages/salary | Project-Based | Completed | Fully | Significant Effect | Significant Effect | Little to No Effect | Significant Effect | Moderate Effect | Little to No Effect | Decreased | 57 | 1 |
| 7 | Reporting - Quarterly Budget Projections and Annual Budget Reporting | Quarterly report assesses budget to actuals and completing projection to year end, and develop strategies to ensure budget stay on plan; annual budget sets plan for upcoming fiscal year to achieve a balanced budget at minimum, and progress toward achieving 2% operating margin by FY25 | Operational | Ongoing | Fully | Significant Effect | Significant Effect | Moderate Effect | Little to No Effect | Moderate Effect | Little to No Effect | Decreased | 54 | 3 |
| 9 | Reporting - Quarterly Capital Reporting and Biennial Capital Plan | Quarterly report assesses capital plan to actuals, reports on any changes and how changes impact overall long-term financial plan; biennial capital plan sets plan for capital investments while preserving a debt service burden of less than 8% | Operational | Ongoing | Fully | Significant Effect | Significant Effect | Moderate Effect | Little to No Effect | Moderate Effect | Little to No Effect | Decreased | 54 | 3 |
| 2 | Cash Flow Modeling and Projections | Implemented planning tool to show actuals, trends, and historical data on cash flow. | Operational | Ongoing | Fully | Significant Effect | Moderate Effect | Little to No Effect | Little to No Effect | Little to No Effect | Little to No Effect | Decreased | 45 | 5 |

What effect does or would this risk mitigation strategy have on reducing the University system's exposure to actual or potential service disruptions, impacts associated with service disruptions, and/or impacts to operations?

Demo of MATRX

Stakeholder Engagement

Mitigation Assessment - Stakeholder Engagement Process



ERM

Stakeholders



Sample Results from Pilot



Financial Sustainability

Preliminary Individual and Comparative Mitigation Strategy Assessment

| | |
|---------------------------------|--|
| # Strategies | 20 |
| Risk Mitigation Partners | <ul style="list-style-type: none"> • UMPO A&F Team • Campus Budget Directors • Campus Controllers |

Individual Mitigation Effectiveness Scale



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| Rank | Mitigation Title | Implementation Status |
|------|--|-----------------------|
| 1 | State Financial Support | Fully |
| | State Funding of CBA Increases | Planned |
| 2 | Reporting: Q'ly Budget Projections & Annual Budget Reporting | Fully |
| | Reporting: Q'ly Capital Reporting & Biennial Capital Plan | Fully |
| 3 | Reaching/Maintaining 2% Operating Margin | Fully |
| | Cash Flow Modeling and Projections | Fully |
| | Reporting - Annual Five-Year Forecast Refresh | Fully |
| | Reserve Policy | Fully |
| | SPARC Dashboard | Fully |
| | UMass Global Financial Reporting | Fully |
| 4 | Maintaining Availability of Line of Credit | Fully |
| | Operating Cash Invested with Foundation | Fully |
| | Implementation of UMPlan for Annual Budgeting | Fully |
| | UMPlan - Financial Forecast Module | Fully |
| | UMPlan - Tuition Planning Module | Fully |
| 5 | Chart of Accounts Update | Partially |
| 6 | Compliance with Federal Grants | Fully |
| 7 | Monitoring Standard Metrics | Fully |
| | Adoption and Forecasting of Changes in GASB | Fully |
| | Appropriate Account Treatment for P3s | Fully |



Facilities & Deferred Maintenance

Preliminary Individual and Comparative Mitigation Strategy Assessment

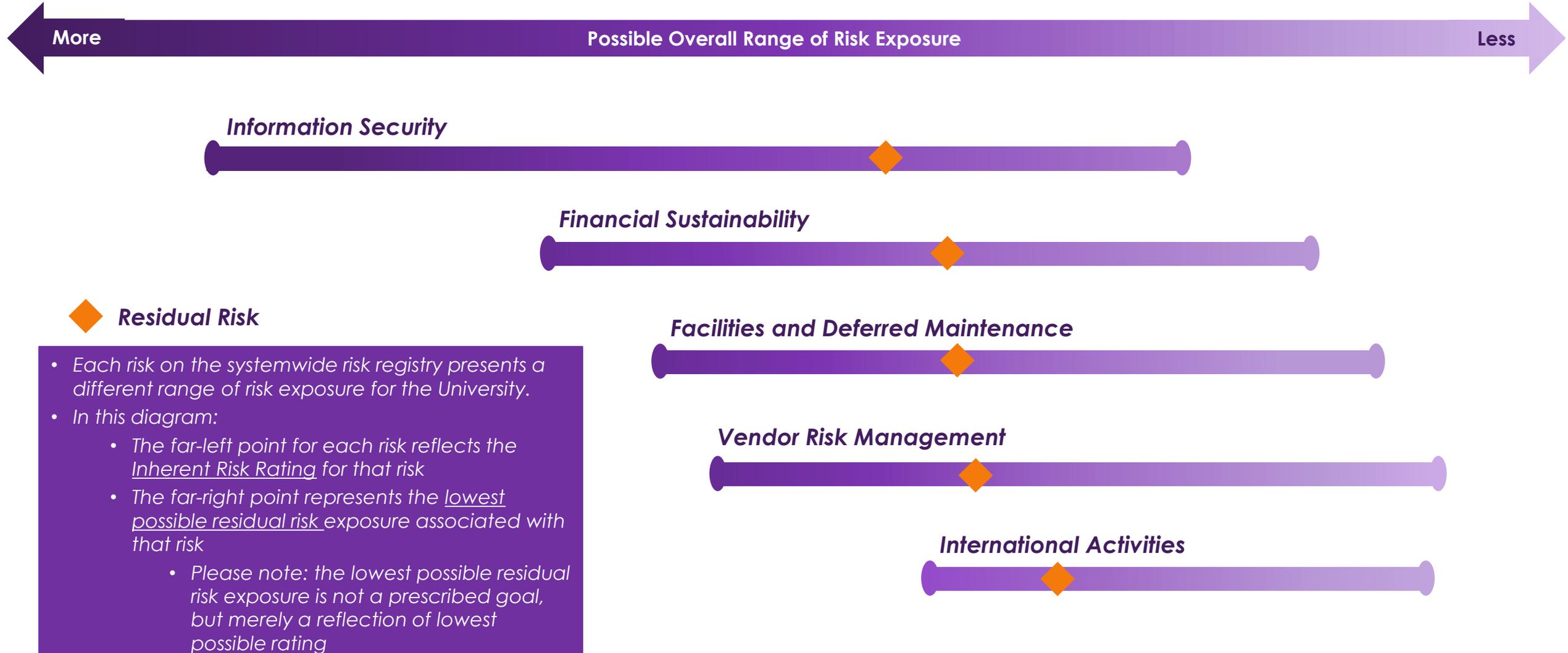
| | |
|---------------------------------|--|
| # Strategies | 7 |
| Risk Mitigation Partners | Facilities and Deferred Maintenance Working Group (EE) |

Individual Mitigation Effectiveness Scale



| Rank | Mitigation Title | Implementation Status |
|------|--|-----------------------|
| 1 | Reaching/Maintaining Keep Up Targets | Partially |
| | Reaching/Maintaining Catch Up Targets | Partially |
| 2 | Reporting - Biannual Capital Plan | Fully |
| | Reporting - Quarterly Capital including Catch Up and Keep Up | Fully |
| | Annual Update of Campus Deferred Maintenance (Gordian) | Fully |
| | Capital Policy & Standards | Fully |
| 3 | Tracking Spending Against DCAMM Contracts | Fully |

Movement in Reducing Risk Exposure



◆ Residual Risk

- Each risk on the systemwide risk registry presents a different range of risk exposure for the University.
- In this diagram:
 - The far-left point for each risk reflects the Inherent Risk Rating for that risk
 - The far-right point represents the lowest possible residual risk exposure associated with that risk
 - Please note: the lowest possible residual risk exposure is not a prescribed goal, but merely a reflection of lowest possible rating
- The orange diamond reflects the current residual risk having accounted for existing mitigation strategies.

Conclusion and Take-Aways

MATRIX: What It Does and Does Not Tell Us

MATRIX provides leadership with information to inform discussion about whether to accept the residual risk or take additional actions to avoid, transfer or further reduce risk

Does

- Provides transparency on risk mitigation strategies
- Demonstrates progress on mitigating risk or depicts areas that may require additional attention
- Enables more robust discussions on risk and risk mitigation
- Demonstrates movement in addressing risk

Does Not

- Does not track key performance indicators
- Does not define risk tolerance
- Does not define specific follow-on actions needed
- Does not conclude satisfaction or dissatisfaction with status of addressing risk

Impacts to Our ERM Program



Operationalizing ERM

- Enabling risk-informed decision-making
- Aligning operational priorities to risk



Increasing ERM Program Visibility

- Building partnerships with internal and external stakeholders
- Identifying and sharing best practices



Demonstrating the Value of ERM

- Serving as a resource for the University
- Understanding residual risk exposure

Let's Review

- Aligning assessment of risk mitigation strategies to your risk assessment methodology allows for:
 - Streamlined assessment process
 - Transparency of risk mitigation strategies
 - Measuring progress in reducing risk in relationship to risk exposure

Questions?



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