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A TECHNOLOGY INVESTMENT REQUEST (TIR) GUIDE:

THE REQUIREMENTS & BENEFITS PLANNER

Defining and Linking Requirements to Goals and Objectives

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Version 3

A TIR Guide: Defining and Linking Requirements to Goals and Objectives

The Requirements and Benefits Planner combines the documentation of both requirements and benefits within the context of business goals and objectives. This creates a stronger business case. Goals and objectives delineate the projects direction and purpose. Requirements show how these are to be achieved. Benefits are the desired and measurable results of goal accomplishment. Please also refer to the ***TIR guide: Defining, Mapping and Tracking Benefits Related to Project Goals and Objectives***.

Goals and Objectives

Definitions of terms:

- **Business Objective Statement** - As described in the ***FY16 TIR Instruction Guide***, the Business Objective is a statement that identifies the primary reason for the project. This statement should simply quantify what you are trying to accomplish by when. It may be stated in the following manner:

  > "In order to *[Increase/Decrease]* the *[Functionality/Problem]* must change from *[Baseline]* to *[Target]* by *[Date]"*

  For instance: "In order to decrease the average patient wait time, the intake process at the hospital must be decreased from 15 minutes to less than 5 minutes within one year of implementation." Note that this is stated as a business objective and not an IT objective. You will only use an IT objective when the business problem is an IT issue. (see ***FY16 TIR Instruction Guide*** for further details on how this relates to the Business Reason for the project).

- **Goals** –Goals, in the context of the TIR, apply to broad areas of benefit, such as those used by the IT Strategic Planning Committee to rank TIRs for the Governor's Recommends budget. Examples include: Statutory Compliance, Enterprise Scope, Increased Efficiencies, Improved Customer Service, Financial Impact, Security and Risk Reduction.

- **Objectives** - An objective is a specific area of action that helps achieve an established goal. For instance, *Reducing redundancy, rework and rekeying of data* would be an objective that ties to *Increased Efficiencies*. A specific requirement for this objective might be *the System will log all data entries for audit purposes*.

Requirements

Definitions of terms:
Three primary types of requirements are used both in the TIR and the IT RFP.

- **Functional Requirements** – Functional requirements (also known as Business Requirements) specify particular results of a system or application related to supporting business functions. Functional requirements may be inputs, process requirements or specific outputs that define “what” a system is supposed to accomplish to meet business needs. These requirements necessarily tie to an agency's business mission, goals and objectives. Additionally, they should link, at least indirectly to the biennial budget initiatives and xyz set by the Governor. The FY16 Requirements Matrix has been placed in a new Excel Work book that allows both requirements and benefits to like to established goals and objectives.

- **Technical Requirements** – Technical requirements specify overall system and application characteristics. These include hardware, software, local and wide area communications requirements and necessary technical interfaces. Some characteristics, such as data processing throughput, capacity, and storage parameters can be best defined by a professional capacity planner. This service is available from EITS. These requirements may be defined in terms of calculated capacity estimates or technical details. The definition should be objective, quantifiable and measurable. The Requirements Matrix has a place to indicate whether the particular technical requirement depends on an EITS' billable service or is the responsibility of the vendor. When this is not known, "TBD" can be inserted in the table. EITS billable services are listed in the service catalog on the EITS Web site.

- **Security Requirements** – Security requirements establish the security parameters within which the application and system must operate. These policies, processes and procedures may be defined at the Federal, State, or local agency level. Please refer to the State’ security policies <http://infosec.intranet.nv.gov/Security_PSPs.htm>.

  Specific security requirements that apply to all technology projects have been loaded into the TIR Requirements Matrix template as **Requirements Categories**. It is advisable to contact the Office of Information Security (OIS) during the process of completing your security requirements to further develop these requirements in your TIR Requirements Matrix (775-684-4333).

Documenting Goals and Objectives in the Requirements and Benefits Planner.
The first step is to determine the goals or major areas of accomplishment for the IT project. It is important that the sponsor and key stakeholders all participate in this process. This is similar to establishing a Charter for the project. Key questions to ask are:

1. What are the most important things this project should achieve, such as:
   - Reducing Costs
   - Increasing Efficiencies
   - Better information for Decision Making (Business Intelligence)
   - Improving Process Effectiveness
2. How and Where can these goals be achieved (objectives)
3. Rank and prioritize.
4. Select the key Goals and Objectives.

When making a case for funding, consider using goals that address areas of importance for the funding source. For example, the table here shows goals based on the ranking criteria used by the IT Strategic Planning Committee to evaluate and rank TIRs for the Governor's budget. If your project is associated with a Grant, you may choose to use goals from the grant. Federal Advanced Planning Documents (APDs) identify initiatives that may translate as project goals. Similarly, if the TIR ties to a business plan or other strategic document, goals may be linked to the strategic document. A combination may also be used. However, remember that too many goals and objectives can water down a business case. The proof may come out if you find that you have no requirements or benefits that tie to a particular Goal/Objective.

However, it is possible that a Goal/Objective only has intangible benefits related to it (i.e. nothing quantifiable). Those goals need to be addressed in the narrative of the Business Case. Use a footnote to reference where the intangible benefits for that goal are discussed.

TIR Goal and Objectives Template

***Goals and Objectives** [an example]* *FY16* - Goals and Objectives			
Goal ID	**Goal**	**Objective ID**	**Objective**
A	**Statutory Compliance**	**1**	Description for A1
		2	Description for A2
B	**Enterprise Scope**	**1**	Description for B1
C	**Increase Efficiencies**	**1**	Description for C1
D	**Improved Business Customer Service**	**1**	Description for D1
E	**Financial Impact**	**1**[i]	Description for E1 [an objective that has neither a requirement of measurable benefit tied to it but that has a significant intangible benefit described in the narrative of the TIR
F	**Security**	**1**	Description for F1
G	**Risk Reduction**	**1**	Description for G1

Identifies high level business goals. These maybe areas of importance identified by the IT Strategic Planning Committee, the Governor's initiatives, or Strategic goals of the agency.

Identify objectives. These are specific areas for further action. Both Requirements and Benefits will further quantify these with measurable deliverables and results. It is possible that an objective will have both a measurable result (benefit) and a specific required action or deliverable (requirement).

[i] This is an example footnote for Goal E, Objective 1, referencing the section and page in the TIR where this intangible benefit is described.

TIR Example: Goal and Objectives Table

***Multi-Business Data Sharing Project* [an example]** *FY16* - Goals and Objectives			
Goal ID	**Goal**	**Objective ID**	**Objective**
A	**Statutory Compliance**	**1**	Improve efficiencies in information sharing in order to better meet statutory and regulatory mission
B	**Enterprise Scope**	**1**	Enable the seamless interface to access data from multiple participating agencies regardless of IT platform or system
		2	Streamline required business customer activities across State and local agencies.
C	**Increase Efficiencies**	**1**	Ensure interface to associated business systems are available to participating entities.
		2	Support Single Source of Truth (SSOT) data and data guardianship, and provide common cross-agency keys.
		3	Increase speed and accuracy of business functions.
D	**Improved Business Customer Service**	**1**	Improve ability to respond accurately and in a timely fashion to external customers and business partners
E	**Financial Impact**	**1**	Reduce consumables and equipment for mailing costs (postage, envelopes, printing, copying, storage, etc).
		2	Reduce costs of managing batch files.
		3	Reduce costs of manually repairing data.
		4	Reduce or eliminate the creation/printing/storage costs of hardcopy forms (eco-friendly).
F	**Security**	**1**	Prevent fraud and security breaches by providing standard audit controls and monitoring.
G	**Risk Reduction**	**1**	Reduce State risk by creating a common shared set of information.

Entering Requirements into the Requirements and Benefits Planner:

The Requirements Matrix for FY16 expands on the one used for FY14 with the addition of Goals and Objectives and some rearrangement of columns. As before, each requirement is numbered. The numbering sequence can be used later during RFP construction, and as a project management tool to track requirements through the development process.

While requirements relate to business goals and objectives, it is not intended to break out requirements by goals and objectives. As before, requirements should generally break into three primary areas: Functional, Technical and Security requirements. Each of these areas can be further broken down if desired. The first example here shows how a single worksheet can be used to break out Functional, Technical and Security requirements. For more complex projects, separate tabbed worksheets within the *Requirements and Benefits Planner* can be used for each requirement type. The next three examples show how a worksheet can be used for each requirement type. Within each of these worksheets, requirements can be grouped within **Requirement Categories**. For instance, if security requirements are in tab 3 and numbers begin at 3.1, then 3.1 could be used to refer to a group of requirements related to *Security Compliance*, 3.2 for *Confidentiality*, 3.3 for *Availability* and 3.4 for *Access* requirements. These Requirement Categories should be identified in the area provided at the top of the worksheet. Specific requirements should then be developed for each category. For instance, regarding the category example just given, 3.1.1 would be the first specific requirement within the Compliance group, 3.1.2 the second requirement within that group and so on. LIkewise, the first requirement in the *Access* group would be 3.4.1 (see example below).

The FY14 Requirements Matrix had a field for indicating if EITS had a role in meeting the requirement. This has been expanded to show if there is responsibility by the Vendor and/or Agency as well. Single or multiple responsibilities can be shown (see example below). If all or part of a requirement require a billable EITS technology service please describe this in the Description field . EITS services are detailed in the EITS Service Catalog < http://it.nv.gov/IT-Service-Catalog/>.

Requirements Matrix Template

Link To Goals and Objectives in the first Tabbed Sheet

Number and Identify the general **Requirement Category**

Is the requirement part of the current system? Use **Y**es only for fully met requirements

Is this a required feature of the initial **B**ase system or a planned **F**uture enhancement? Some requirements may have both *B*ase and Future components.

Goal	Obj	E- ITS A-gency V-endor	#	Requirement	Current		Need	Planned Sys-tem		Description
					Y	*N*	*E, I, D*	*Base*	*Future*	
			1.1	General						
			1.2	Specific Area						
			1.1.1							
			1.1.2							
			1.2.1							

Number and Identify the specific requirement

Is this **E**ssential (can't do without it), **I**mportant (needed, but could do without in the initial implementation), **D**esirable (would like to have, but not necessary)

Provide a specific description of the requirement.

Will this requirement involve a billable EITS service? A **Y**es does not exclude the role of other non-DoIT service components. This just indicates planned DoIT service utilization. Use "**?**" if undetermined. [This field ONLY applies to Technical and Infrastructure Requirements]

TIR Requirements Matrix: Example 1 - Simple Combined Requirements

(Business, Technical and Security in one tabbed sheet).

Goal	Obj	E- ITS A-gency V-endor	#	Requirement	Current		Need	Planned Sys-tem		Description
					Y	*N*	*E, I, D*	*Base*	*Future*	
			1.1	Business / Functional						
			1.2	Technical						
			1.3	Security						
A	**1**	V,A	**1.1.1**	Tracks business transactions and generates a daily log		N	E	Base		Transaction types and overall use of log determined by business team
B	**2**	V,A	**1.1.2**	Access five years of history information		N	E		Future	Or, as defined in retention schedule for documents to be defined by Governance Committee. This could have huge storage impact and should be carefully considered
A	**3**	Vendor	**1.1.3**	Allows customers to view their service records on line.		N	E	Base		This should be via the Web interface
B	**1**	V,A	**1.1.4**	Provides 30-60-90 day aging reports on open service issues		N	E	Base		Governance team to determine which issues are to be tracked
A	**4**	EITS	**1.2.1**	Interfaces with current DMV license data		N	E	Base		DMV data hosted on State Mainframe
A	**2**	EITS	**1.2.2**	Works with current hardware and software products; Windows 7, SQL Server, xyz,		N	E	Base		Refer to standards and Enterprise Architecture
C	**1**	Vendor	**1.3.1**	System shall comply with State Consolidated Security Policy 4.1		N	E	Base		OIS Confirmation
B	**3**	Vendor	**1.3.2**	All confidential state critical data shall be encrypted		N	E	Base		State Policy
C	**2**	Vendor	**1.3.3**	The system shall support an enterprise Identity and Access Management (IAM) suite with audit and monitoring tools		N	E	Base		See Use Case 1.3. The vendor shall describe how SLAs and identified third (3rd) party vendor(s) can provide monitoring tools and services.
D	**1**	E- V TBD	**1.3.4**	The system will be available during normal work hours 8-5:00 M-F	Y		E	Base		See COOP and CBTAP for further details

TIR Requirements Matrix: Example 2a - Multi-Agency Business Requirements

(Business requirements in their own tabbed sheet).

Goal	Obj	E- ITS A-gency V-endor	#	Requirement	Current		Need	Planned Sys-tem		Description
					Y	*N*	*E, I, D*	*Base*	*Future*	
			1.1	General						
			1.2	Risk Management						
			1.3	Buildings and Grounds						
			1.4	Controller						
			1.5	State Lands						
E	**5**	V,A	**1.1.1**	Ability to view electronic source doc-uments		N	I		Future	Documents, ownership, access issues to be determined by business team from agencies. Tech ability by vendor
C	**3**	V,A	**1.1.2**	Can sort and filter data by type and date and generate ad hoc reports		N	E	Base		Example reports to be provided by business team to vendor
C	**2**	V,A	**1.1.3**	Logs transactions		N	E	Base		Transaction types and overall use of log determined by busi-ness team
B	**2**	V,A	**1.1.4**	Supports a governance process related to State Land assets		N	E	Base		
C	**5**	V,A	**1.1.5**	Ownership transactions must be tied with one or more APN		N	E	Base		Insures ability to cross-check ownership information with As-sessor's office
D	**2**	V,A	**1.1.6**	Track building projects within the system		N	E	Base		Develop an integrated application that would mirror the Land Agent's project work flow The system should automatically generate status and metrics
C	**1**	V,A	**1.2.1**	Capable of interfacing with an RMIS		N	I		Future	RMIS alternatives under review by Risk Management Div.
C	**7**	V,A	**1.3.1**	Access to maintenance history on state buildings		N	E	Base		History data maintained by State Public Works
C	**1**	V,A	**1.4.1**	Records need to link to state asset values in Advantage		N	E	Base		Controller maintains state fiscal records and is source for this.
E	**4**	V,A	**1.5.1**	All required information and tracking must be linked to the associated land DSL File Number		N	E	Base		This includes linking the following to their associated DSL File Number to: Ownership transactions Use transactions Project transactions Maintenance transactions History

TIR Requirements Matrix: Example 2b - Multi-level Technical Requirements
(Technical requirements in their own tabbed sheet).

Goal	Obj	E- ITS A-gency V-endor	#	Requirement	Current		Need	Planned Sys-tem		Description
					Y	*N*	*E, I, D*	*Base*	*Future*	
			2.1	HW/SW/Hosting/capacity i.e. infrastructure						
			2.2	Application/DB issues						
			2.3	Network & Interfaces (including user)						
D	3	Vendor	**2.1.1**	Web-based Application		N	E	Base		Eliminates need to install application Allows access from any Internet connected device
C	4	Vendor	**2.1.2**	SOA architecture		N	E	Base		
C	1	Vendor	**2.1.3**	GIS		N	E	Base		EITS Application support & Vendor Support
F	1	EITS	**2.1.4**	Hosted in State's "Cloud"		N	E	Base		EITS virtual server hosting - IaaS
A	1	A-Risk Mgt	**2.2.1**	Risk Management data will be the source of State liability information		N	E	Base		The Governance Committee will establish and maintain the basic data dictionary with source data, ownership, etc.
A	1	A-St.Lands	**2.2.2**	State Lands database will be the main source for parcel information		N	E	Base		
A	1	A- B&G	**2.2.3**	Buildings and Grounds data will be the main source for maintenance records		N	E	Base		
A	1	A-Controlr	**2.2.4**	The Controllers data will be the source financial assessment information		N	E	Base		
E	4	Vendor	**2.2.5**	SQL Based		N	E	Base		EITS DBA supported
C	1	Vendor	**2.3.1**	Direct interface with GIS		N	E	Base		Allows questions to be answered quickly and users to orient themselves spatially. Historical ownership layer can be added after base information is populated
C	1	E-V-A	**2.3.2**	Direct interface with IFS/Advantage		N	E	Base		Interfaces with participant data are essential to SOA and Web Services projects
C	2	E-V-A	**2.3.3**	Direct interface with State Lands system		N	E	Base		
C	3	E-V-A	**2.3.4**	Direct interface w/Buildings and Grounds		N	E	Base		
C	1	E-V-A	**2.3.5**	Direct interface with Risk Management		N	E	Base		

TIR Requirements Matrix: Example 2c - Multi-level Security Requirements
(Security requirements in their own tabbed sheet).

Goal	Obj	A-gency ISO V-endor E-ITS	#	Requirement	Current		Need	Planned System		Description
					Y	***N***	***E, I, D***	***Base***	***Future***	
			3.1	Compliance						
			3.2	Confidentiality (encryption, etc.)						
			3.3	Access / Integrity						
			3.4	Availability						
A	1	V,A	**3.1.2**	The system shall comply with the State consolidated security policy 4.1000000 or the most current version of the State consolidated security policy.		N	E	Base		The system shall provide auditable compliance with all required Federal and State security requirements, rules, and standards, including but not limited to NRS 205.4742 and NRS 603A.
B	3	Vendor	**3.2.1**	All confidential, state critical data will be encrypted.		N	E	Base		This is a basic state policy.
C	2	Vendor	**3.3. 1**	The system shall support an enterprise Identity and Access Management (IAM) suite with audit and monitoring tools.		N	E	Base		See Use Case 1.3. The vendor shall describe how SLAs and identified third (3rd) party vendor(s) can provide monitoring tools and services.
F	1	Vendor	**3.3.2**	System can differentially assign object level access permissions		N	E	Base		Standard security requirement
F	1	Vendor	**3.3.3**	The system shall validate that the user create a valid password and token that complies with the State security policy.		N	E	Base		The system shall implement password strength and aging according to security requirements.
F	1	Vendor	**3.3.4**	The system shall uniquely resolve identities.		N	E	Base		The system shall implement an Identity and Access Management (IAM) solution that provides for designing resolvable identities that are recognized and utilized across multiple domains.
F	1	Vendor	**3.3.5**	The system shall support automated reset of passwords and user IDs.		N	E	Base		The system shall maintain the single sign-on capabilities of the user across the Portal and participating agency systems during the automated resetting of passwords and user IDs. The system shall allow the messages to the user throughout the process to be configured by an administrator.
D	1	V,E,A	**3.4.1**	System will be available during normal work hours 8-5:00 M-F	Y		E	Base		See CBTAP for details
D	1	V,E,A	**3.4.2**	Maximum Allowable Outage = 1 wk	Y		E	Base		See CBTAP for details

In Summary:

Requirements gathering is a critical part of any technology project, whether it be for custom software development, the procurement of a commercial application or for some other implementation type. Requirements should address business functionality, technical and security needs based on stakeholder input. Exclusion of an important stakeholder group during requirements gathering may lead to an under scoped and under funded project. Poor requirements gathering can lead to costly rework, expensive workarounds, and/or poor purchasing decisions. A good set of functional and technical requirements are necessary to assure that the planned solution will meet stakeholder needs. All requirements should be defined in a manner that is objective, quantifiable and measurable, and in such a way that they can be independently evaluated to determine if the requirements have been met.

Business requirements should track to business goals and objectives. Likewise, technical requirements should be cast in light of Statewide standards for technology and security.

Requirements are collected and documented in a way that can be used during a Request for Proposal (RFP) template. The ability to link requirements to specific business goals and objectives was added to the template for FY16-17.

The completed *Requirements and Benefits Planner* should be appended to the TIR Business Case as an attachment. Requirements defined here need to be summarized at an executive level in the business case narrative of the TIR, *Section 4.4 Expected Functionality and Benefits*. TIR *Section 6: Technology Context* is used to summarize important technical and security issues.

For further assistance, please contact the EITS Help Desk (684-4333) and open a ticket for the EITS Planning and Project Delivery team.