



FY 2010-2011
Agency Guide to
IT Investment
Planning

OhioDAS

Ohio Department of Administrative Services
Office of Information Technology
Investment and Governance Division
Office of State IT Investment Management

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1.0 Purpose of the Agency Guide to IT Investment Planning

Over the past several decades, Information Technology (IT) has become increasingly important to the efficient and effective operation of state government. Investment of scarce public resources in carefully selected IT projects offers significant benefits including increased productivity of government workers and improved service delivery to the citizens and businesses of Ohio. Effective IT investment planning is a good first step to counter the pressure to do more with less.

Government agencies in the State of Ohio have been engaged in formalized IT investment planning activities during the last two decades. The benefit to these agencies and the citizens of Ohio is undeniable. Over time, the maturity of agency IT investment planning processes has improved. The maturity of these planning activities necessitates the continued maturity in automated support for these activities.

State of Ohio IT Policy ITP D.4, "Information Technology Planning," requires that state agencies establish and maintain IT investment plans. The *Agency Guide to IT Investment Planning* is designed to help agencies prepare, update, and use IT investment plans submitted to the Office of Information Technology (OIT) pursuant to State of Ohio IT Policy ITP D.4 (ohio.gov/ITP).

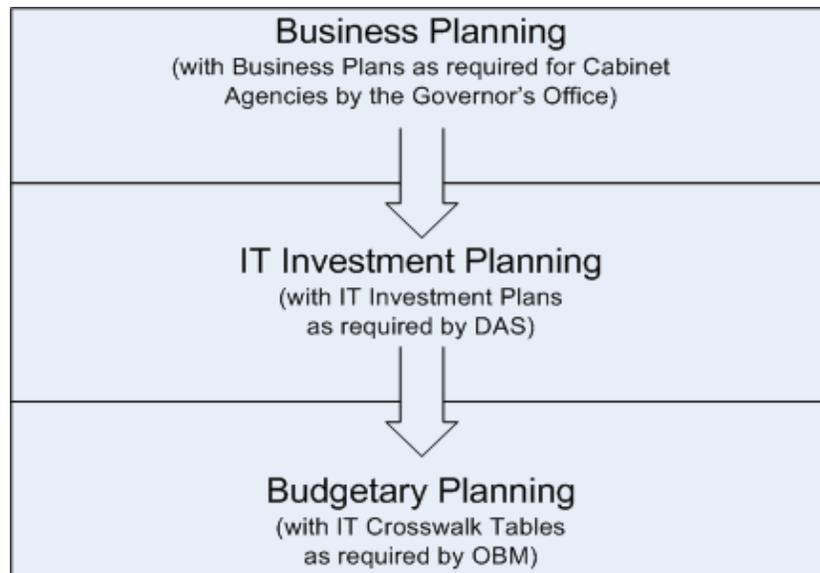


Figure 1 – Progressive IT Investment Planning Approach

The figure above shows the normal sequence of planning activities for IT investment planning. First, agency planners consider their mission, business goals and objectives, and other direction during the creation of their business plans. Second, agency planners involve their IT managers and determine how

IT assets (existing and planned) can help achieve agency business goals and objectives during the creation of their IT investment plans. Finally, agency planners develop budgetary profiles that identify how and when financial support for the IT investment decisions can be executed during the creation of their Crosswalk tables.

Automated tools are not a requirement for successful execution of IT investment planning, but they can aid business and IT managers across the enterprise. During the last three planning cycles, the ePlanningIT application provided support for the creation and management of agency IT plans. For the FY10/11 planning cycle, ePlanningIT is replaced by the Information Technology Investment Planning (ITIP) application, a streamlined, easier to use application that reduces the burden on agencies in their IT investment plan creation. The figure below illustrates the role ITIP will play in the IT investment planning lifecycle and automated support environment.

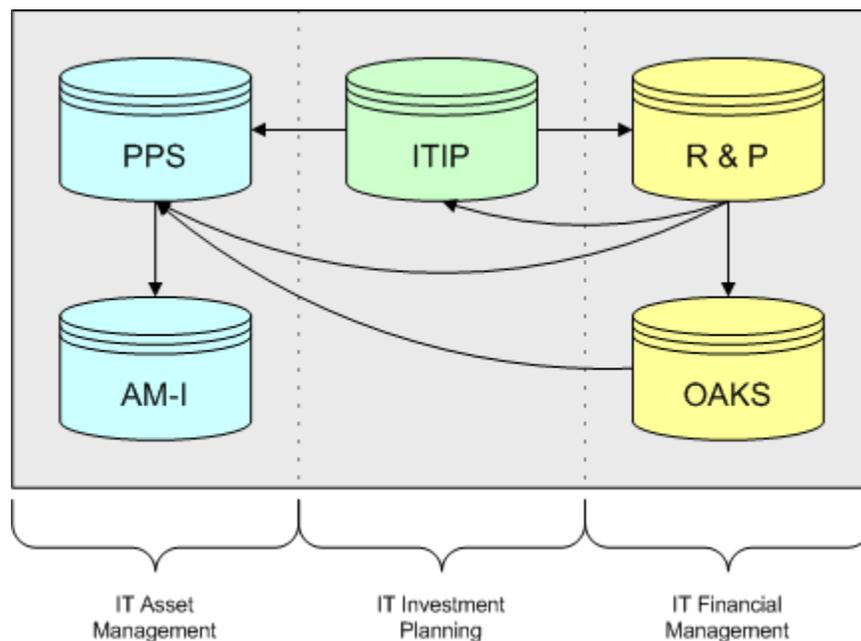


Figure 2 – Integrated Planning Environment

The *ITIP* database will contain the IT investment plans for each agency. Those plans document the IT projects that each agency wants to execute and the budget profile for that project. Further, the IT investment plans double as a narrative to inform the development of the IT budget. Some IT projects in the investment plan may be selected for monitoring by *Project Portfolio Server (PPS)* during project execution. Any new IT assets that are delivered during project execution are catalogued in the *Application Management-Inventory (AM-I)* database for future agency and OIT use. On the financial side, the budgetary profiles for those IT projects and existing IT assets (i.e., maintenance activities)

are documented in the IT investment plans. After budget approval, acquisition requests flow through the *Release and Permitting (R&P)* application for acquisition approval, and subsequently through *OAKS* as those requests become purchases. Thus, the entire financial series of transactions can be monitored and managed within both an IT and business perspective.

This integrated planning environment demonstrates the value of active management of IT investments. Business goals and objectives establish the scope and IT investment priorities, existing IT assets are considered and budgets developed, and IT projects to implement new processes or create new IT assets are considered and budgets developed.

This guide explains the basic elements that should exist in an IT investment plan and provides guidance on how to obtain and document this information. For agencies that have previously developed IT investment plans, the guide provides formatting standards and additional information for use in IT planning. For agencies that have not developed IT plans, the guide provides a process for developing IT investment plans accompanied by examples. Agencies must take it upon themselves to integrate IT investment plans and IT planning processes into their ongoing management of information technology. After agencies have formulated their IT plans, the *ITIP* tool (<http://pzprod.ohio.gov/PortalPZ/Pages/Login.aspx>) provides a vehicle for agencies to document and update IT investment plans as required in State of Ohio IT Policy ITP D.4. For guidance on how to use the *ITIP* tool, see the *ITIP* Users Guide.

2.0 Agency IT Investment Plan Overview

An agency IT investment plan is a tool to help State of Ohio agencies improve the selection and management of IT investments. IT investment plans provide a framework for agencies to respond to dynamic social, political and economic conditions when making decisions regarding the use and procurement of IT. The goal is not just to create a useful document, but also to engage state agencies in a disciplined process that offers them the capability to deliberately respond to changing environments when making decisions regarding IT.

The successful application of IT does not start with technology; it starts with a business view firmly anchored in strategic thinking, which considers agency mission, vision, business drivers, business goals and business objectives. Proper application of IT maximizes the efficient operation of state agencies and the effectiveness of government services. Successful IT planning for state agencies requires the following elements:

- Active involvement of agency executive management in partnership with agency IT management to complete IT investment planning.
- Clear and concise understanding of agency purpose and mission.
- Strong alignment of IT investments to agency business objectives and business goals.
- Strong alignment of agency IT investments with State of Ohio IT policies, direction, and enterprise initiatives.
- Compiling and sharing with key decision-makers the best available information regarding costs, benefits, and vulnerabilities for each planned IT project.

The State of Ohio’s IT investment planning process starts with agency business strategies (i.e. mission, vision, goals and objectives). These concepts are incorporated in an agency’s business plan. The agency profile information contained in the ITIP application identifies specific IT related activities that the agency plans to undertake in order to support its business strategy. This includes specific information about planned IT projects, application maintenance, and infrastructure maintenance.

Agency IT investment plans are developed on a biennial basis in conjunction with the development of biennial budget recommendations. IT investment plans should be updated as the agency’s business conditions change, or specific IT project phases change, budgetary conditions change, or other significant project planning information changes (this may occur several times a year). The timeline for IT investment plan submission and scheduled minimum updates for fiscal years 2010 and 2011 is as follows:

Pre-Planning Activities:	
Application Management	Ongoing
Planning Activities:	
Initial Plan Submissions:	September 2, 2008
Biennial Plan Updates:	August 31, 2009
Periodic Plan Updates:	Ongoing
Preparation for next biennial plan:	January 2010

The budgetary aspects of investment planning information may require several updates to the agency plans. Initial project and maintenance estimates can be revised several times before final submission to OBM. Once budgets are approved and source funds identified, final revisions should be applied to planned projects and maintenance forecasts.

IT investment plan updates to other plan sections should be made on an ongoing basis as certain events or conditions occur. For further guidance on updating an IT plan, see *Appendix A: IT Plan Updates*.

At various times in this planning guide, an "*Investment Planning Application Information Requirements*" section will appear. These sections identify information that agency planners will need to document the results of the planning activity where these insertions appear. The creation of this information is not the goal, but the by-product of the planning activity.

3.0 Developing and Submitting Agency Profile Information

IT investment planning is a joint activity between agency business executives and IT management. If IT management performs IT investment planning without this partnership, the value of the planning process is less useful for the agency. There are two elements to a solid foundation for IT investment planning: the business context and the agency IT context.

Successful IT investment planning requires a business mission context, identifies long-term and short-term business needs, and never ignores or minimizes that perspective during the various IT planning phases. The business mission provides context, the business goals and objectives identifies priorities and organizational needs help drive how IT will support the agency. As identified in figure 1, agency business plans provide document the business context.

Some IT investment planning components have a broad impact on the agency and should be considered as the agency IT context. Such information identifies business realities and IT assumptions and constraints for multiple IT activities. This agency IT context is outlined in the beginning of the IT investment plan and should remain a key factor during the various planning phases of IT investment planning. This portion of the IT investment planning guide provides a high-level understanding of the planning elements needed for the agency IT context.

3.1 Agency Profile – Overview

The first step in the development of agency profile information is a high-level overview about IT planning within the agency. During the early stages of the planning period, an honest assessment of recent progress by the agency and a clear, high-level summary of the planned direction resulting from the activities and efforts documented in the remainder of the plan should be identified. In other words, where has the agency been, and where is it going?

Recent Progress

Agency investment planners should consider and document the progress made since the publication of their initial IT plan during the last planning period. The progress made since the last planning period identifies areas with positive

organizational momentum, and organizational areas needing redirection. Further, if agency progress was different from the planned progress, a high-level summary of deviations the agency may have made from the initial plan, including any mitigating factors (e.g., changing technology, culture, consultant costs, budgetary adjustments, constituents, etc.) that contributed to the deviations should be noted. Significant business or technical events or changes that occurred during the last biennium that may have been unforeseen or beyond the control of the agency should also be noted, particularly if the effects of those events play a role in how the remainder of the agency IT investment plan progresses.

Planned Direction

Agency investment planners should also assess their high-level goals and statement of direction. These business and technical goals should drive the planning for the IT activities documented in the investment plan and how these activities are implemented. For the purposes of the IT investment plan, this plan information can also be considered an executive summary, as it summarizes the high-level IT activities and efforts for the next biennium. Accordingly, this plan section summarizes the agency's IT investment plan and since it is the first plan section a reader of the plan sees, it sets the stage for how the rest of the plan is received.

Investment Planning Application Information Requirements

- ✓ IT Investment Plan Contact – the individual the agency designates as the primary point of contact for IT investment planning and how that individual may be contacted.
- ✓ Executive Summary – a high-level summary of the remainder of the IT investment plan, i.e., a statement of the agency IT investment goals and how they may be implemented during the next biennium.
- ✓ Progress Made Since Last Planning Period – a description of what changes occurred within the agency during the last planning period.

3.2 Agency Profile – Assessment

The next step in the development of agency profile information is an agency-level assessment about IT investments and planning within the agency. Information in the agency profile assessment includes considering supplemental planning documents, agency strengths and weaknesses and the maturity of project management within the agency.

Business Plan

The agency business plan provides the proper context for how an agency approaches the development of their IT investment plan. Many agencies already

have a business plan. Some exist as the result of a request from the Governor's Office to create one, and others exist because the agency recognizes the value of a business plan. However, if the agency has not created a business plan for the Governor's office or their own internal purposes, the agency planner should consider the creation of an agency business plan, incorporating the following components:

- Business goals
- Business objectives
- External factors, such as business drivers
- Critical Success Factors (CSFs)

Finally, it should be noted that the creation of a business plan document is not required in order to complete or publish an IT investment plan. However, it is recommended that an agency perform the business planning activities documented in a business plan prior to creation of the IT investment plan, as IT assets should exist to support business activities. If a business plan does not exist to drive IT investment priorities, then it is likely that the IT investment plan will reflect IT priorities and may even informally reprioritize how some business goals and objectives are satisfied.

Technology Plan

For many agencies, the information provided in their biennial IT investment plans is sufficient for technology planning. However, other agencies have technology planning needs that exceed the information traditionally captured in that document and create a supplemental technology plan. If those exist, they should also be considered during the assessment phase of IT investment planning. Some components to consider including in an effective technology plan include the following:

- Alignment of technology priorities with business priorities
- Current/As-Is and Future/To-Be views of the technology platforms
- Guiding principles that establish decision-making criteria for technology platform implementation, sustainment, and retirement.
- Plans to provide sufficient skill sets for operational and development environments.

IT Budget Crosswalk

Although the IT budget crosswalk is created later in the IT investment planning process, it is mentioned here as an additional supplemental document. It supports the financial planning component presented in figure 1. Although a business plan is either required or highly recommended, and a technology plan may be advisable, the IT budget crosswalk represents financial planning that is required for successful IT investment planning. The crosswalk must reconcile with the cost summary tables provided in the IT investment plan, and be consistent with OBM budgetary direction.

Agency Strengths and Weaknesses

An honest assessment of the agency, particularly within the context of how to effectively leverage IT investments must include agency strengths and weaknesses in the administration of IT resources. The conditions considered at this point may not be totally under the control of the planners, but existing circumstances and constraints cannot be ignored.

The organizational strengths statement should address the positive aspects of how IT resources are managed and administered in the agency. Agency strengths may include effective training programs, low turnover rate for IT personnel, effective communication at all levels of management, and stakeholders that offer strong support.

Example of agency strength statement:

“Most of our IT managers have been with the agency in excess of ten years and they provide a wide variety of IT expertise, and fully understand, and support the agency organization and mission. The agency has a strong training program that keeps pace with current and leading edge technology. We experience a very low turnover rate of IT staff.”

The organizational weaknesses statement should address negative aspects of how IT resources are managed and administered in the agency. Agency weaknesses may include obsolete hardware assets, poor support facilities, and anticipated shortfalls in financial resources.

Example of agency weakness statement:

“Insufficient IT staffing levels due to retirement and budget constraints; current and expanding technological needs that cannot be addressed due to insufficient human and financial resources.”

Consideration of an agency’s strengths and weaknesses in the context of IT resource usage should factor heavily in the planning of IT maintenance activities and the IT projects included in the IT investment plan.

Project Management Maturity within the Agency

The project management maturity level within an agency is a good indicator of the success of the planned IT activities (i.e., maintenance and projects). If the project management processes maturity level is high, the deployment of new or enhanced resources has a higher probability of success. If the project management processes maturity level is low, there is a higher probability of project failure.

Project Management Maturity Plan

Agencies may document additional information to support or elaborate on their project management process maturity level. Maturity comments may include statements about existing best practices in the agency, the current status of project management training efforts, and the project management trends within the agency (i.e., practices that are improving or not improving).

Example:

“The agency made significant progress in its project management maturity during the last planning period. Over half of the agency’s project managers became certified during the last eighteen months, and some internal project management practices were documented during the last year.”

Investment Planning Application Information Requirements

- ✓ Business Plan – If the agency has a business plan, the agency planner should locate it and have it available for upload. Some agencies have produced a Flexible Performance Agreement document for the Governor’s Office. Other agencies have documentation that contains the critical planning elements of a business plan. If so, the application will prompt the user for a file path and name.
- ✓ Technical Plan – If the agency has a technical plan, the agency planner should locate it and have it available for upload. Some agencies have produced documentation that contains critical planning elements of a technical plan. If so, the application will prompt the user for a file path and name.
- ✓ Agency Strengths – A description of the agency strengths regarding the use of IT resources in the agency.
- ✓ Agency Weaknesses – A description of the agency weaknesses regarding the use of IT resources in the agency.
- ✓ Project Management Maturity Level – The selection of a statement that most closely matches the agency project management maturity level.
- ✓ Project Management Maturity Plan – If the agency has planning information that documents how the agency will mature their project management environment, then a description can be documented here.

3.3 Agency Profile – State IT Focus Areas

The State IT Focus Areas comprises several high-level, business-oriented focus areas about issues and factors agencies should consider in their planning activities. Agency planners should consider these IT focus areas and how they may affect the identification and implementation of their IT activities. If any of these focus areas will influence the remaining portions of the investment plan, then documenting those relationships and impacts will be important.

Investment Planning Application Information Requirements

- ✓ State IT Focus Area Alignment – agency planners may identify one or more State IT Focus Areas that is in alignment with the activities the agency will perform during the next planning period.
- ✓ State IT Focus Areas Approach – for any State IT Focus Area, agency planners may further document why an alignment does not exist (for a State IT Focus Area not in alignment) or how various business or IT activities may support or be aligned with that State IT Focus Area.

3.4 Agency Profile – Maintenance

Two types of IT activities are documented in the IT investment plan: maintenance on existing IT assets, and the creation of new IT assets or capabilities, in the form of their portfolio of IT projects. The maintenance activities consider existing infrastructure and applications. The portfolio of IT projects considers the enhancement/improvement of existing IT assets, or the creation of new IT capabilities and subsequent implementation of those new IT assets. The planning for IT projects is covered later in this guide. The figure below provides a few guidelines to help determine how to categorize these activities.

Categorization of IT Plan Activities

IT Projects	Application Maintenance	Infrastructure Maintenance
<p>IT projects are defined using <u>ALL</u> of the following requirements:</p> <ul style="list-style-type: none"> • Activity with definite beginning and end. • Activity is unique or non-routine for the agency. • Activity is complex for the agency. • Activity is undertaken to create new IT capability/functionality. • Activity consumes constrained resources (money, people, equipment, etc.,) available to the project. 	<p>Application maintenance is defined using the following requirements:</p> <ul style="list-style-type: none"> • Activity is routine and needs to occur on a regular basis. • Activity is undertaken to maintain existing service levels or is undertaken to maintain/modify existing application functionality. <p>Subcategories of maintenance include:</p> <ul style="list-style-type: none"> • Fixes: Include changes to recover from system or application failures. • Enhancements: Include changes to provide additional capabilities for application users. • Upgrades: Include changes to improve system performance and efficiency. • Improvements: Include changes to improve existing functionality 	<p>Infrastructure maintenance is defined using the following requirements:</p> <ul style="list-style-type: none"> • Activity is routine and needs to occur on a regular basis. • Activity is undertaken to maintain existing service levels for the user community. <p><u>AND</u> one of the following:</p> <ul style="list-style-type: none"> • Activity is undertaken to maintain physical computing infrastructure or systems software (e.g., operating systems, compilers and utilities for managing computer resources). • Purchased software package and ongoing maintenance thereof (whether externally or internally maintained).

Figure 3

The preceding figure offers clarification to distinguish between the various IT activities. A few examples may be helpful:

- Personal computer replacement – IT purchases to replace aging IT assets should normally be identified in the infrastructure maintenance area.
- Pre-packaged software – Often, these IT assets are pre-loaded on newly purchased computers. However, there are times when an entire platform requires an update (e.g., Microsoft Office). These activities and purchases should normally be identified in the infrastructure maintenance area.

- Pre-packaged application - Some agencies have purchased, licensed, or are supporting an application used by other agencies or customers (e.g., OAKS, CAVU/e-licensing). Those activities and purchases should normally be identified in the application maintenance area.

3.4.1 Application Maintenance

Applications are one form of IT assets. An inventory or catalog of all applications that provide service and support for business activities is a best practice for IT managers. The *AM-I* application managed by OIT provides a good environment to aid agency planners during this phase of the IT investment planning process. Applications have a lifecycle and agency planners should consider application age, the supporting IT infrastructure for the application, stability, operating costs, and other factors as the maintenance activities and budget for the next biennium are established.

Anticipated Application Maintenance Activities

Application maintenance activities include all IT staff operations performed on a regular basis to maintain the functionality of existing application software and to maintain service levels for the agency and its user community. Maintenance and updates of application software or end-user programs are considered application maintenance activities. These application maintenance activities should support the IT applications catalogued in the OIT *AM-I* application.

Anticipated Application Maintenance Budget

The budget forecasting process is a sequential progression that begins with an initial estimate and continues through the assignment of source funds. Again, agency planners should use the inventory of agency applications from the *AM-I* inventory to establish this budget.

3.4.2 Infrastructure Maintenance

Agencies are asked to identify all of their planned infrastructure maintenance activities. Historically, these activities occur on a regular or periodic basis to maintain the functionality of the IT infrastructure. It is the agency's responsibility to ensure these activities align with the agency business objectives in their business plan and any priorities established in a technical plan.

Infrastructure Maintenance Activity Description

Infrastructure maintenance includes all IT staff activities performed on a regular basis to maintain the functionality of the current IT infrastructure, such as maintaining physical computing resources and updating systems software.

Maintenance and updates to the current computing infrastructure to sustain existing service levels for the agency and its user community are considered infrastructure maintenance activities.

Anticipated Infrastructure Maintenance Budget

The budget forecasting process is a sequential progression that begins with an initial estimate and continues through the assignment of source funds and the recording of expenses.

Investment Planning Application Information Requirements

- ✓ Application Maintenance Activities – an overview of the activities the agency plans to maintain their application inventory. Of special note would be planned activities that deviate from normal maintenance.
- ✓ Application Maintenance Budget – a high-level profile of the budget planned for application maintenance for both fiscal years.
- ✓ Infrastructure Maintenance Activities – an overview of the activities the agency plan to maintain their infrastructure assets. Of special note would be planned activities that deviate from normal periodic activities or purchases.

4.0 Developing and Submitting IT Project Profile Information

The portfolio of IT projects document the majority of the short-term IT activities in the IT investment plan. They exist to implement technology-based change within an agency and its operating environment. An IT project is an activity that is undertaken to create new IT capability/functionality; has a definite beginning and ending time frame; is unique, non-routine and complex; and consumes constrained resources. This section of the planning guide provides an overview of the planning activities for development and documentation of IT projects.

The next step in investment planning, and the first step associated with IT projects is the creation of a list of candidate IT projects. Agency planners will always have more IT project candidates than time and resources allow. Consequently, the following list of factors should be considered by agency planners during the project candidate list review and assessment:

- Ongoing projects – Ongoing projects should not be continued just because they are not finished. Constraining factors accounting for schedule slippage, budget overruns, and other potential problems should affect a decision to continue, redirect, or end an ongoing project.
- Maintenance projects – consider carefully the creation of a separate project to perform maintenance-like activities on an existing application or infrastructure platform. Agencies can manage the effort in one of several different ways, but as long as maintenance efforts are split between maintenance budgets and IT project budgets, accurate IT budget profiles remain elusive.

(new projects)

- Business alignment
- Technology alignment
- Risk and benefit profile

These and other factors should be considered by agency planners as investment selection criteria during the project candidate selection process prior to their inclusion in an IT investment plan. Establishing priorities for selected and unselected projects aids the planning process, and may also have an impact on maintenance activities and budget.

Once the project candidate list has been reviewed, assessed, and validated by agency planners, a detailed project information profile for each of the selected projects must be established. This project information profile provides a high-level overview of the project for interested stakeholders. This same information should be included in the IT investment plan. The remainder of this investment planning guide documents the planning progression for this process.

As the project section of the planning guide continues, some concepts may be better explained with some examples. A few fictional projects are defined below to facilitate understanding in those areas:

- Legacy-to-Web App – a project to convert a legacy application to a web application.
- Security Upgrade – a project to enhance capabilities of the existing technology infrastructure.
- Data Warehouse App – a project to support multiple agency business units with a centralized data warehouse.

4.1 IT Project Profile – Overview

The first step in the development of project profile information is a high-level overview of the IT project as currently envisioned by agency planners. This overview establishes a business and technology context for the project.

Project Identifiers

Establishing a nomenclature for a project for future reference is not critical to understanding the identity or role of a project. However, they can be of some value in managing larger groups of projects.

ITIP Project Identifier

This identifier is automatically generated by the current investment planning application (ITIP) when a new project is created. The Project ID consists of the agency's abbreviation code and a three-digit number (e.g., ABC-001). Agency planners do not need to create this identifier, but should take note of the

identifier assigned by the *ITIP* application, since it is used by OIT and other agencies for referencing.

OAKS Project Identifier

As OAKS becomes available to agency planners for project budgeting and tracking, OAKS will have a project identifier assigned. Again, agency planners should take note of this identifier so that cross-referencing can occur when necessary.

Agency Project Identifier

There are two different reasons why agency planners would use a third project identifier supported by the *ITIP* application.

1.) Some agencies have internally maintained identifiers for their projects. For those agencies, that same identifier can be used to facilitate agency cross-referencing between *ITIP* and their internal tracking mechanism.

2.) Some agencies manage multiple projects as a group. They may be considered programs, or portfolios, or some other logical grouping. An alternative grouping scheme would consider prefix/suffix attachments to identify efforts with similar technologies, business goals, or other managerial tracking purpose.

Although the *ITIP* application provides for these three project identifier types, agency planners should not feel obligated to allocate significant time to this issue. It is provided to planners who need it, and can be given less consideration by those that do not.

Project Name

Project names should have meaning and should be appropriate. Usually, the name corresponds to what the project is commonly referred to within the agency.

Project Type

Agencies must specify the project type as new capability, enhancement/expansion, one-time requirement, or other IT-related activity. A description of each is listed below:

- New Capability – the project will add a new capability to the IT environment. New hardware, software, application, web site, etc.
- Enhancement/Expansion – the project will enhance or expand an existing capability to the IT environment. Examples would include platform migration (e.g., database, mainframe, or portal), security or server improvements, or application modernization.

- One-Time Requirement – the project is a one-time, unique activity associated with the IT environment. Examples may include pandemic preparedness, creation of a plan or study, or an IT-related project that exists to satisfy a legislative or executive requirement/initiative.
- Other IT-Related Activity – any IT activity that cannot be classified as one of the other three. Examples may include staff augmentation or other continuous IT activity that cannot be classified as maintenance or operations.

The goal of this typing scheme is to establish classification criteria that is mutually exclusive, or at least reduces overlapping of definitions. The agency planner should consider the new capability type first, the enhancement / expansion type second, etc. For projects that can be classified as a *new capability* and an *enhancement/expansion*, use the type that occupies the most time, effort, and budget to successfully implement.

Project Purpose

The project purpose should describe problems or opportunities that the project will address and the consequences if the project is not pursued in the specified planning period. Problems or opportunities may include mandated requirements such as changes in the law or executive directives, end-user/customer requests, or technology initiatives to improve the agency's technology-based operations. The purpose of the project should align with satisfying the agency business goals and objectives typically found in the agency business plan. Generally, the project purpose is one to five sentences in length but may be as long as one page.

Examples:

- Legacy-to-Web App – “This project is driven by a declining pool of IT programmers with specific skill sets, as well as the need to respond to citizen expectations. The existing legacy application is written in a language known by only three remaining IT personnel and two of them will retire within the next year. Additionally, several modules of the application provide service to citizens with expectations of web capabilities not available in the current application. If the application is not converted within the planning period, loss of key IT personnel will be detrimental. Subsequent conversion of the application will require significantly more resources including time, personnel, and funding. Moreover, the ability to meet citizens' expectations for web capabilities will be delayed further.”
- Security Upgrade – “This project is needed to comply with Administrative Rule: abc-999, which requires security protection for all IT applications providing service to citizens. There are eight existing applications that require technology upgrades to satisfy the law. Failure to complete the project within the planning period will cause non-compliance with Administrative Rule: abc-999 which may result in penalization of the agency.”
- Data Warehouse App – “This project will consolidate seven separate databases and their applications. Historically, the redundancy of data within the separate

databases results in poor data quality. Redesigning the information and data architecture for the agency business units will significantly improve service to citizens and reporting capabilities for managers. If the project is not pursued within the planning period, poor data quality will continue to hamper the agency's efforts to provide improved services to the citizens of Ohio. Additionally, inaccurate data will hinder management's ability to make accurate, informed decisions."

Project Dates

Every project has an anticipated duration, that is, when it should start and end. Sometimes there are business reasons why a project must start during a specific time period, or why it needs to be completed by a certain date. Sometimes, when funds or personnel can be available drives the end points and/or duration of the project. Consideration of these dates should be matched by the budget profile, that is, funding should exist to cover the start and end date window, and not outside of that window.

An additional aid to establishing a start/end date window is the status and phase considerations for a project. Each project has a series of phases that define the lifecycle of the project, and a status that defines current project conditions. A good starting point to explain these phases and status conditions can be found in the state's project management methodology, the Project Management Community of Practice (PM COP) project management standards. Project planners should review these standards to help plan the lifecycle and progression of each project.

Project Scope

The project scope identifies the project deliverables such as features, functionality, and a description of the work that must be done to produce the deliverables. Deliverables are the high-level outcomes, results or items that must be produced to complete a project. These deliverables must be measurable, tangible and verifiable.

Example:

"The existing legacy application consists of nine major functional modules. The source code for all nine modules must be converted to *modern language Z*. Additionally, the three modules providing functionality to citizen group B will be redesigned to match existing expectations of web applications. The primary deliverable of the project is a new source code base, with the functional characteristics of the citizen-oriented modules adapted for web operations. Additionally, this will require revalidation of the business rules and test scripts for the unchanged modules (to verify continuation of existing functionality) and a

requirements capture process to precede the redesign of the three web-browser based modules.”

Project Technical Approach

The project technical approach identifies how hardware, software and telecommunications services will be employed in the project, to the extent known. Additionally, if security requirements exist for the project, those should be identified and a high-level approach outlined. It should be clearly stated if no hardware, software, telecommunications, or security requirements exist for the project. Additionally, the technical approach should discuss how the technical environment for the project will transition into the maintenance support environment. Projects not started should begin with high level descriptions in each area, while ongoing projects should provide additional detail in each area.

Examples:

- “Hardware – The hardware requirements for this project are minimal. The existing mainframe platform in use by the agency has sufficient processing capabilities and disk space to support the next application. In the third phase of the project, additional disk space will be required to facilitate data backup requirements.
- Telecommunications – A telecommunications needs study will be part of the design phase of the project and the results of the study will be incorporated at a later time.
- Software – The data warehouse will be procured from an existing commercial source. The functional requirements are not rigorous, so enough candidates will be available to keep the acquisition costs down. Contractor support is expected for data migration and cleanup from the source applications. Internal staff will be trained in the software to provide reporting capabilities.”
- Security – The existing security architecture in place for current applications should be sufficient for this project.

Project Assumptions

Project assumptions include internal and external conditions such as technology constraints, human resources, stakeholder expectations and political factors. These assumptions may define, limit, or constrain the environment or circumstances under which the project is developed and implemented. The agency should document all project assumptions that could affect the cost, schedule or quality of the project during implementation and/or the expected benefits upon project completion.

Examples:

- Legacy-to-Web App – “Two of the three key programmers will only be available for two years due to planned retirement. Expansion of functionality will be limited to only the citizen-oriented modules.”
- Security Upgrade – “The vendor will provide long-term support for the security standard chosen. A mechanism to monitor and control the effectiveness of the solution will be established.”

Project Business Support

Every IT project should exist to satisfy a business goal and objective. The objective may be to reduce IT costs or maximize existing IT assets, but new or expanded capabilities are usually undertaken to satisfy a business requirement. Identifying the business context for each project establishes the linkage between IT assets and capabilities and the business functions they should support.

Project Success Criteria

Success criteria describe the measurable value the agency expects from completion of the project, with the key word being measurable. If the results cannot be measured, it may be hard to justify the business value. Generally, success criteria are one to five sentences in length.

Examples:

- Legacy-to-Web App – “The program code written in *obsolete language X* will be rewritten in *modern language Z* before the existing application maintenance staff retires. This will reduce the personnel cost to support the application by 20%.”
- Security Upgrade – “The security upgrade should reduce the security exposure and break-ins by 95%. This upgrade will replace 35% of the existing communications backbone, thus increasing service levels by 80% to four agency locations.”

Project Mandate

Some projects exist to improve business conditions or services, while others exist to satisfy external requirements. Recognizing these external requirements may affect when or how projects are planned. Recognizing whether a project is voluntary or discretionary, mandated by legislation, or mandated by a non-legislative mission critical requirement can help establish priorities among projects competing for the same IT resources.

Investment Planning Application Information Requirements

- ✓ Project Identifiers – If agencies are currently using OAKS or other internal tools to help track existing or planned projects, then those identifiers should be available for cross-referencing.
- ✓ Project Name – A name currently in use within the agency during discussions and other project documentation should be available.
- ✓ Project Type – The type of project should be known.
- ✓ Project Purpose – A short project purpose statement should exist.
- ✓ Project Dates – A known window of project start date (actual or estimated), and project end date (estimated) should exist.
- ✓ Project Scope – A short project scope statement should exist.
- ✓ Project Technical Approach – The technical approach should be documented and available.
- ✓ Project Assumptions – Any project assumptions should be documented, or “None” stated if none exist.
- ✓ Project Business Support – The business linkage between the IT project and business goals and objectives should be documented.
- ✓ Project Success Criteria – The criteria used to measure project success should be documented.
- ✓ Project Mandate – Any external requirements for the existence of the project should be known and identified.

Many of these planning components should be found in a typical project management plan, or one of its component plans. Most of the critical IT projects found in IT investment plans would benefit significantly from the creation of these management plans. Again, details on these plans and their use can be found in the PM COP.

4.2 IT Project Profile – Turnaround Ohio Alignment

The agency planner should document how the project fits into the Governor's Turnaround Ohio initiatives. Agency planners will recognize that not every Turnaround Ohio goal and objective has a clear IT solution, and some of these goals and objectives exist outside the mission of their agency. Nonetheless, if the planned project supports one or more objectives within a Turnaround Ohio goal, an alignment should be documented.

4.3 IT Project Profile – Benefit and Risk Context

IT planning involves assessment of project vulnerabilities, project impact, and overall project feasibility. This assessment can involve a thoroughly documented risk review by the project manager, periodic review by an internal project review board, independent review of the project by a third party, external review by an investment committee, or any combination of these or other project review and assessment activities. The result of this effort provides valuable vulnerability,

impact and feasibility control information to project planners and managers, and may help establish priorities among projects competing for the same resources.

For more information, refer to *Planning Resource – Benefit and Risk Profiling* available through the ITIP application, within the Document Library.

Investment Planning Application Information Requirements

- ✓ The ITIP application contains a series of questions and possible answers to aid in the risk and benefit assessment of a project. Any materials used internally by an agency that supplemented this internal planning process should be available.

4.4 IT Project Profile – Collaboration Environment

For each planned IT project, identify all other agencies that have involvement in the design and/or implementation of the project. Significant value is recognized from coordinating and communicating activities during the project planning process and as the project progresses. In the past, it has been difficult to identify interagency projects because agencies refer to them by different names. It is recommended that the agencies participating in interagency projects work together to provide similar naming conventions to aid in the identification of these projects.

Agency planners will also be asked to describe the nature of the collaboration efforts with other agencies. This often ignored aspect of project planning may help identify additional risks to the project as well as costs and constraints. The list below identifies some examples of when other agencies have a collaborative interest in an IT project:

- Another agency is a business partner in the service chain to the citizen.
- Another agency is a stakeholder for a business objective similar to the one identified by this agency.
- Another agency shares infrastructure with the target environment for the project.
- Another agency shares development or implementation resources that will be used for this project.

Investment Planning Application Information Requirements

- ✓ Collaborating agency list – Project planners will be asked to identify all the agencies participating in a collaborative manner on the project.
- ✓ Collaboration description – A brief description on the nature of the collaborations should exist. If different agencies have different collaboration requirements and activities, those should be documented.

4.5 IT Project Profile – Enterprise Initiatives

The agency planner should document how the project fits into the enterprise view of IT projects. In this plan section, the agency planner documents alignment of the project to the Ohio enterprise IT initiatives. These IT initiatives focus on an enterprise-level approach to improve efficiencies, decrease costs, maximize use of resources, improve services to customers, and reduce redundancies across the state. An agency project may depend on or contribute to the success of a statewide IT initiative. When that is the case, the relationship between the project and the initiative should be documented in the technical approach, success criteria, or assumption plan sections of the project plan.

4.6 IT Project Profile – Federal Enterprise Architecture (FEA) Alignment

One important task in the project planning process is the placement of a project within the context of enterprise architecture. Every agency has an enterprise architecture, although most of them are undocumented and informal. Starting with this planning period, OIT is adopting the Federal Enterprise Architecture (FEA) and its' component reference models as a classification framework for project alignment purposes. The FEA is stable and has been in use at the Federal level for over five years. Although an additional resource tool is available to provide an expanded explanation of each reference model, the definitions below provide a high-level synopsis of the FEA reference models in use for this planning period:

- Business Reference Model (BRM) – This reference model provides a framework facilitating a business function (rather than organizational) view of the state government's lines of business (LoBs), including its internal operations and its services for citizens, independent of the agencies, commissions, boards and offices performing them.
- Service Reference Model (SRM) – This reference model provides a business-driven, service-oriented framework classifying service components according to how they support business and performance objectives.
- Technical Reference Model (TRM) – This reference model is a component-driven, technical framework categorizing the standards and technologies to support and enable the delivery of service components and capabilities.

These reference models provide a stable classification framework to help agency and enterprise planners map their IT support environment to business functions, and identify collaboration and interoperability opportunities. These alignments

provide planners with another tool to help understand the business processes supported by the services implemented by the technology. As investment planning processes mature, identifying overlaps, gaps, and high-alignment areas will become important to agency and IT planning managers.

For a more thorough description of the reference models listed above, see *Planning Resource – FEA-RM Overview*.

4.7 IT Project Profile – Budget Profile

The budget estimating and forecasting process is a sequential progression that begins with an initial estimate and continues through the assignment of source funds and the recording of expenses. Creating a budget profile for a project is a slightly different process than the creation of a budget profile for either of the two maintenance activities, as the entire project lifecycle should be considered and documented. Basically, the budget profile for a project breaks down as follows:

- Past/Prior FYs – If the project is not new, i.e., continued from the previous planning period, historic costs and expenditures exist for the project. It is important to maintain a record of past costs, and this portion of the budget profile documents those costs.
- Current/FY10 and FY11 – Initially, this portion of the budget profile documents the budget estimate for the two fiscal years in the current planning period. As the planning cycle progresses, these budget estimates become approved budget values.
- Projected/Future FYs – If the project is scheduled for completion after this planning period, then a projected budget for cost estimates that are expected anticipated after the current planning period should be recorded.

All project budget costs should be applicable only to the successful completion of the documented goals for the project with duration as identified in the anticipated completion date. Any anticipated maintenance or other operational costs for implemented applications/capabilities would be recorded as maintenance costs in future IT investment plans.

For each of the three time periods, the appropriate budget groups and categories (i.e., hardware, software, and application/project support and their breakdowns) must be provided. When totaled, each of these budget groups and their cumulative totals comprise the budget profile for the lifecycle of the IT project.

5.0 Related Resources

The State of Ohio IT Policy ITP D.4, *Information Technology Planning*, effective July 2008 (www.ohio.gov/itp).

6.0 Inquiries

Direct inquiries concerning the planning issues covered in this planning guide to:

IT Investment Management Administrator
Office of State IT Investment Management
Investment and Governance Division
Office of Information Technology
Department of Administrative Services
30 East Broad Street, 39th Floor
Columbus, Ohio 43215

Telephone: (614) 387-3056
Facsimile: (614) 644-9152
Email: state.itplanning.manager@oit.ohio.gov

Appendices

Appendix A – *IT Plan Updates*: The *IT Plan Updates* appendix outlines factors and conditions that affect the planning process and require updates to agency biennial IT plans.

Appendix B – *FY08-09 Biennial IT Plan Importation Matrix*: The *FY08-09 Biennial IT Plan Matrix* lists the agency FY08-09 IT strategic and tactical plan sections that can be copied to the FY10-11 IT investment plan.

Appendix A – IT Plan Updates

Agencies are required to update their IT investment plans on a biennial basis, and as factors and conditions occur that affect the planning process. This section discusses what those factors may be and how they may affect an agency's IT investment plan.

Application and Infrastructure Maintenance

Change in Application Maintenance Activities – this type of change can occur when budgetary allocations are revised or operational conditions change. Examples include:

- Vendor for application support software terminates support or modifies its maintenance support contracts.
- Significant changes in number of internal staff or skill sets.
- Contracted services terminated for poor performance.
- Key stakeholders lose confidence in the value of provided services.
- Another agency changes its support status, severely impacting the quality of service of the application.
- A completed project transitions to a maintenance activity.

These types of changes should prompt a re-evaluation of the biennial budget projections and potentially the attainment of business goals, particularly if the successful operation of an affected application is strongly aligned to a business objective or goal.

Change in Infrastructure Maintenance Activities – this change is similar to application maintenance, particularly with respect to budgetary changes. Additional examples include:

- Hardware or peripheral assets declared obsolete and unsupported by the vendor.
- Operational and performance capacities are impacted by the implementation of another agency's application.

These types of changes should prompt a re-evaluation of biennial budget projections and planned project timelines, especially if certain projects assume infrastructure support that may no longer be available.

Additional Considerations

A significant and unexpected change to project planning information should cause a re-examination of application and infrastructure maintenance components. A planned project experiencing significant delays may impact planned support estimates and timetables in both maintenance areas.

Project Profile Updates

This section addresses changes to project planning information that should prompt an update to the appropriate sections of a project plan. With rare exception, change in any area of a project should trigger a review of other areas in the project information sections, especially the cost and time projections. Examples of changes to project information that result in updates are listed below.

Change in Project Purpose – this can occur when the context of the project purpose changes. The project is planned to solve a problem or pursue an opportunity. When the opportunity no longer exists or the consequences of the anticipated problem are prematurely realized, the timing or even the need for the project may change. Often subtle conditions outside the control of project planners will trigger this type of change. Planners should periodically re-examine their purpose statement and context to confirm current validity. A confirmed change in purpose will affect the remaining components in the project planning information section.

Change to Project Status-Phase – this change should occur several times during the life span of the project. As the project changes from one project management status/phase to another, the planner should review all aspects of the project planning information. The normal progression of a project's status-phase is from "Not Started", to "Started–Initiation/Planning", to "Started–Execution & Control/ Closing," to "Completed." Although some projects will be "Postponed" and others will be "Cancelled," most IT projects progress through the aforementioned project management phases.

In all cases, change in status/phase signals the starting, stopping or altering of some resource expenditures. Once this occurs, the project plan information should be reviewed and changed as necessary. The project budget profile and the start and end dates particularly should be reviewed. Additionally, the application and infrastructure maintenance sections of the investment plan should be reviewed and updated as needed.

Change in Project Scope – this change occurs frequently and is normally caused by growing expectations of key stakeholders. The length of the project timeline can generally predict the degree of "scope creep" that may occur for a project. Unfortunately, project managers often accommodate changes in project scope without changing cost or time projections. Project planners should frequently review ongoing projects for changes to project scope. The change in scope may be valid and necessary, but any change (even a reduction in scope) should prompt a reexamination of all components of the project planning information.

Change in Technical Approach – this change occurs frequently and is normally caused by managers and technical personnel attempting to take advantage of recent technology advances. Some examples of changes in technical approach and their consequences are:

- **Technology Substitution** – this occurs when one technology solution is replaced with another technology solution. Often, a previously selected vendor offers an upgrade to previously purchased products. Sometimes, the project development team decides one technology can solve several problems at once and “reduce” costs and time. These shifts in the technical approach may result in a reduction of cost or time. Any change to project plans caused by this type of change should prompt a review by project planners.
- **Technology Barriers** – this occurs when a selected technology fails to perform as expected or is the wrong technology solution for the intended problem. This technical approach shift impacts implementation, making existing cost and time projections highly suspect, thus necessitating a review by project planners.
- **Methodology or Process Failures** – this occurs when the selected methodology or implementation process is not executed properly. A project team may compensate by reducing the scope, extending the timeline and/or increasing cost projections. In either case, cost and time projections should be reviewed along with project scope.

In all cases, the technical approach should be periodically reviewed for change.

Change in Project Assumptions – a change in project assumptions is triggered, among other things, when predictable factors such as human resources, technology and other project resources that influence key decisions about cost or time are altered.

Change in Project Business Support – this change occurs when a business goal is weak (i.e., loose project solution association with the stated problem) or the “problem to be solved” loses its impact. Project goals could also change when a business strategy changes direction. Therefore, project goals should be periodically reviewed to ensure project deliverables solve a valid problem.

Change in Project Success Criteria – this change occurs when the nature or severity of the problem that the project is intended to address changes; or when the importance of opportunity the project seeks to create diminishes. These types of occurrences will essentially invalidate the success criteria. The applicability of success criteria should be reviewed and, where necessary, new measurements to determine the project’s value and success should be documented.

Change in Project Vulnerability, Impact and/or Feasibility – these changes occur when there is not continuous risk management on a project. Strategic

vulnerability, project impact and strategic feasibility profiles should be established during initial project planning. However, every project has risks and, if not managed, risks will impact cost and time and may render the project not feasible for development and/or completion. If the project does not have active risk management, the project planner should periodically review the project management matrixes listed in the *Planning Resource – xxx* document.

Change in Budget Amounts – these changes occur as the budget process progresses. The project planning budget should coincide with the initial budget submitted to OBM. Deviations that occur during the budget submission and approval process should be reflected in the project plan. The project budget should coincide with the budget approved by the legislature. Any deviation between the project budget and the approved budget should initiate an update in the project budget. When the project moves into the “Started” status, and as costs are applied and resources are consumed, the agency should periodically update the actual project costs through the expenditures capability.

Change in Other-Agency Interaction – this change normally occurs without notice and may go undetected for a long period of time. Critical dependencies regarding other agencies should be addressed using the strategic vulnerability, project impact and strategic feasibility profiles (see “Change in Project Vulnerability, Impact and/or Feasibility” above). However, all agencies critical to the success of the project should be periodically interviewed to ensure no changes have occurred that may impact the planned project’s success. Project planners should periodically examine meeting minutes or other correspondence as evidence of a proper degree of communication and coordination by project managers. Otherwise, this information should be reviewed with increasing frequency as critical milestones approach.

Appendix B – FY08-09 Biennial IT Plan Importation Matrix

This appendix documents the portions of the previous agency plan (i.e., FY08-09) that will be migrated into the new plan (i.e., FY10-11). Comments provide additional guidance as necessary.

A special note should be made about IT projects carried-over from the FY08-09 plan. Arrangements were made with each agency to import relevant data from the FY08-09 plans into the ITIP application based on input from the agency. Subsequent to this notification, if the agency decides additional projects should be imported, the agency planner should notify OIT of those projects, since agency planners will be unable to assign the same project identifier in ITIP. Agency planners are reminded that it is their responsibility to review all of the migrated data, as some of it may be no longer correct.

Plan sections annotated with “No” in the migration to the FY10/11 plan and no comment entry should assume those sections require information created by the planner during this planning cycle. Plan sections annotated with an “N/A” migration to the FY10/11 plan entry should recognize that no FY08/09 plan information is available.

ITIP Application Sections and Data Elements	Migration to FY10-11 Plan	Comments
Agency-Level Plan Sections		
Overview		
Plan Contact Information	No	Customized for this biennium.
Executive Summary	No	Customized for this biennium.
Progress Made Since Previous Planning Period	No	Customized for this biennium.
Assessment		
Business Plan	N/A	
Technical Plan	N/A	
Crosswalk	N/A	
Agency Strengths	Yes	Copied from previous plan.
Agency Weaknesses	Yes	Copied from previous plan.
PM Maturity Level	Yes	Copied from previous plan.
PM Maturity Comment	Yes	Copied from previous plan.
State IT Focus Area Statements		
State IT Focus Area Statement	N/A	
Maintenance		
Application Maintenance Activity Description	Yes	Both FY08 and FY09 entries will be combined (if not redundant) and copied.
Application Maintenance Budget Profile	N/A	
Infrastructure Maintenance Activity Description	Yes	Both FY08 and FY09 entries will be combined (if not redundant) and copied.
Infrastructure Maintenance Budget Profile	N/A	
IT Project Plan Sections		
Projects Home Page	Conditional	Will copy all projects identified by the agency as being “carried-over” into the new plan.
Profile		
Project ID	Yes	The old project ID from ePlanningIT will be inserted in this field.
OAKS Project Identifier	No	
Agency Project Identifier	No	
Project Name	Yes	Copied from previous plan.
Project Type	N/A	Same field as before, but different choices.
Project Purpose	Yes	Copied from previous plan.
Start Date	Yes	Copied from previous plan.
End Date	Yes	Copied from previous plan.
Project Scope	Yes	Copied from previous plan.
Technical Approach	Yes	Copied from previous plan.

ITIP Application Sections and Data Elements	Migration to FY10-11 Plan	Comments
Assumptions	Yes	Copied from previous plan.
Business Justification	N/A	
Success Criteria	Yes	Copied from previous plan.
Mandated	Yes	Copied from previous plan.
Mandate Explanation	Yes	Copied from previous plan.
Alignments		
Turnaround Ohio Goals and Objectives (alignment)	No	
Information		
Question List	No	
Interagency Information		
Explanation of Agency Collaborations	N/A	
Other Agencies Participating in the Project Design or Implementation	Yes	Copied from previous plan.
Enterprise Initiatives		
Enterprise Initiative List (alignment)	Conditional	Any alignments from the previous plan will apply for the following enterprise initiatives under the specified alignment conditions. Disaster Recovery/Business Continuity: Common Technologies – Disaster Recovery Plan OAKS: Enterprise Initiatives – OAKS Ohio Business Gateway (OBG): Enterprise Initiatives – OBG
FEA		
BRM Alignment	No	
SRM Alignment	No	
TRM Alignment	No	
Budget		
Prior FYs Column	Yes	Prior FY values + FY08/09 values
FY10 Column	No	
FY11 Column	No	

