



Portal Strategy and Roadmap

Roadmap and Recommendations

RCM Technologies

December 1, 2008

For the City of Grand Rapids, Michigan



CHANGE RECORD

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TABLE OF CONTENTS

CHANGE RECORD2

TABLE OF CONTENTS.....3

INTRODUCTION & PURPOSE4

SOLUTION OVERVIEW4

 SOLUTION ARCHITECTURE 4

IMPLEMENTATION APPROACH5

 APPROACH RATIONALE 5

 ESTABLISH FOUNDATION 7

 IMPROVE SERVICES 20

 INTEGRATE AND MEASURE 24

BUDGET.....27

REFERENCES28

INTRODUCTION & PURPOSE

The primary purpose of this document is to layout a plan for the design and deployment of a portal solution for the City of Grand Rapids.

The information presented in this document is the direct result of assessment activities performed during the months of September and October and summarized in the Baseline Assessment deliverable.

The intended audience for this document is the City of Grand Rapids and RCM project teams.

SOLUTION OVERVIEW

RCM recommends the City of Grand Rapids deploys Microsoft Office SharePoint Server 2007 (MOSS) as the portal technology platform. MOSS is a robust, scalable and feature-rich enterprise platform that offers many options and features to create, maintain, and manage public or private websites.

The recommended solution and approach is further described in this roadmap document in order to provide the City of Grand Rapids a clear vision of how SharePoint can be utilized to move toward accomplishing the strategic goals laid out in the Assessment document.

SOLUTION ARCHITECTURE

The recommended solution architecture would include a SQL Server, two MOSS Web Front End Servers, and an Application Server. The diagram below depicts this scenario and takes into account an assumed requirement for high availability and redundancy. For this reason a SQL Cluster is recommended. Also note additional features and components which can be added now or later in order to fulfill the needs of the City of Grand Rapids.

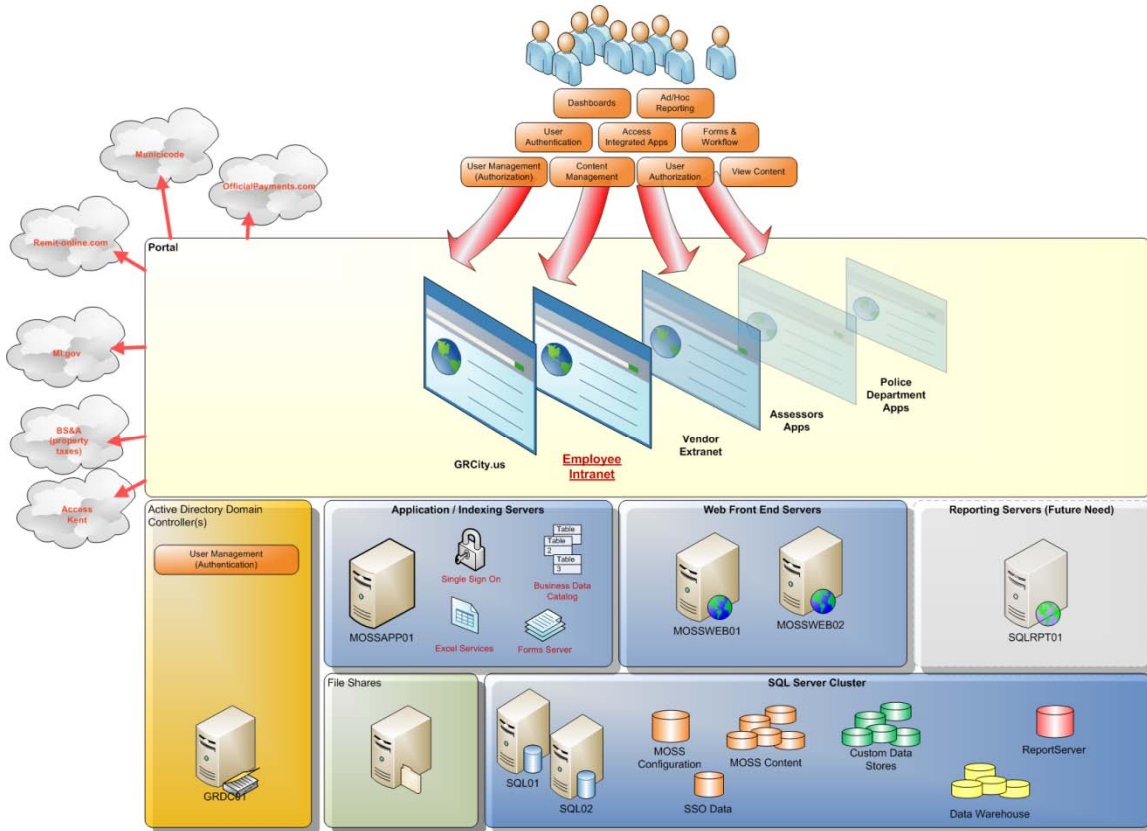


Figure 1: High Level Architecture

IMPLEMENTATION APPROACH

APPROACH RATIONALE

The planning, implementation and deployment of any project is complex and dependant on many factors, including outside forces. Although indicative of a project size and complexity, a comprehensive list of features or requirements does not necessarily reflect the preferred or recommended flow of activities. Additionally, detailed requirements gathering and specifications definition quickly reach a diminishing point of value without actually verifying the requirements through working results.

RCM proposes to breakdown the project structure and feature set in digestible and measurable phases in order to better control the outcome, return on investment and overall risk management of the city's portal initiative.

Our recommended approach would be to engage in a multi-phase project as follows:

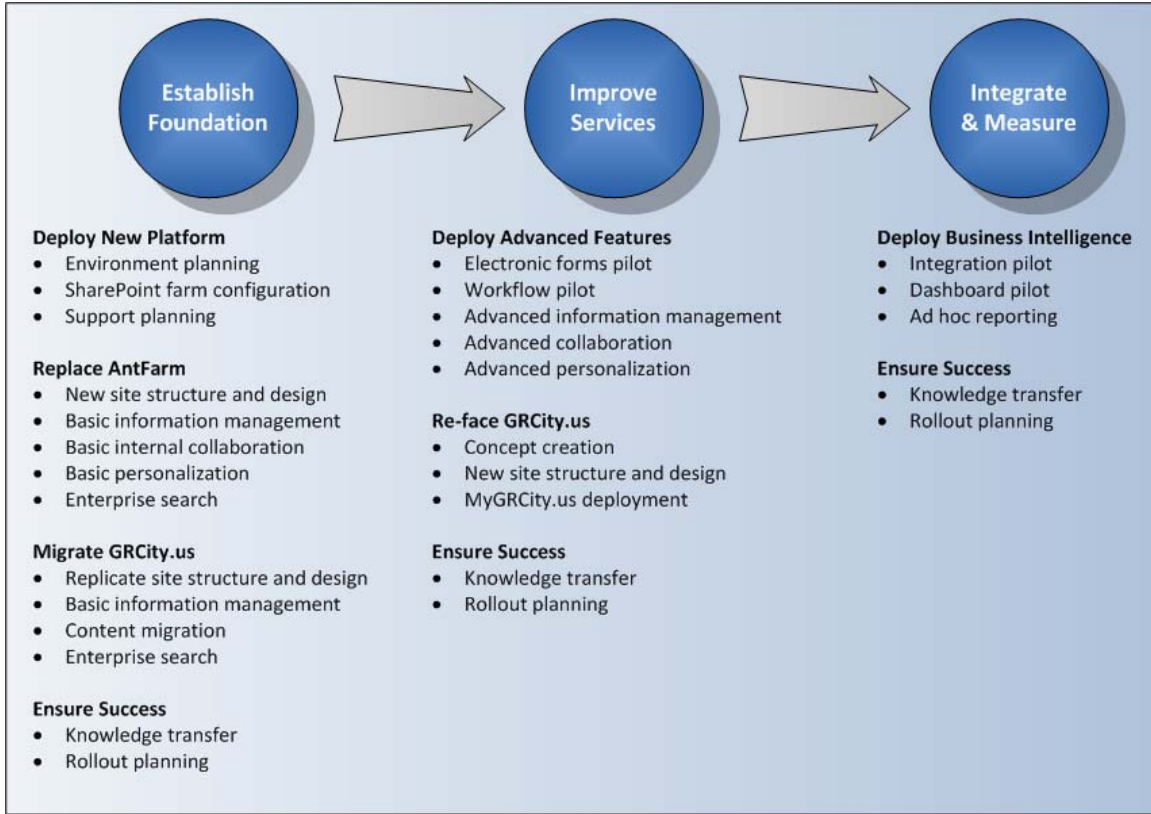


Figure 2: Solution Phases Breakdown

Although each phase is broken down into a set of activities organized to maximize return on investment and user adoption, the City can build upon this plan and further tailor the phases based on specific or updated needs.

The table below summarizes the key factors in recommending the activities.

Phase and Activities	Rationale
Establish Foundation	
Deploy New Platform	<ul style="list-style-type: none"> Lay foundation as part of strategic planning Consolidate required technical skills for all information management needs
Replace Antfarm	<ul style="list-style-type: none"> Centralized information access for all employees Federate information management

	<ul style="list-style-type: none"> • Reduce file duplicates and email storage • Enable enterprise information searching
Migrate GRCity.us	<ul style="list-style-type: none"> • Consolidate technical resources • Consolidate required technical skills for all information management needs
Ensure Success	<ul style="list-style-type: none"> • Maximize investment • Manage change
Improve Services	
Deploy Advanced Features	<ul style="list-style-type: none"> • Maximize user adoption by introducing advanced features after initial platform rollout • Maximize investment
Re-face GRCity.us	<ul style="list-style-type: none"> • Improve external communication • Engage residents
Ensure Success	<ul style="list-style-type: none"> • Maximize investment • Manage change
Integrate and Measure	
Deploy Business Intelligence	<ul style="list-style-type: none"> • Improve data accuracy • Streamline access to data • Improve measurement and control • Enable data based decision-making
Ensure Success	<ul style="list-style-type: none"> • Maximize investment • Manage change

ESTABLISH FOUNDATION

Deploy New Platform

ENVIRONMENT PLANNING

Planning a solid foundation for an enterprise SharePoint implementation will be a key factor in guaranteeing the success of any solution delivered on the platform. It is important to spend the time and effort necessary to properly plan your SharePoint environment. The primary focus areas when planning a SharePoint environment and defining the Service Level Agreement (SLA) include:

- Definition of the requirements for availability
- Definition of the security requirements
- Definition of the requirements for capacity
- Definition of the requirements for performance
- Planning for Disaster Recovery

Planning for High Availability

When defining the requirements for availability for a SharePoint environment we must first determine the goals for uptime of the system as well as the level of downtime tolerance. There are many factors that also play a role in determining the availability of a SharePoint environment, such as network cards, hard disk drives and general network health. In this document we will focus on the availability options for the server roles included in a SharePoint Server farm. When defining the availability requirements you might ask the following questions:

- Is your availability requirement 99% or greater?
- If the service becomes unavailable, will employees be unable to perform their duties?
- If the service becomes unavailable, will business or customer transactions be halted?

If you answered yes to any of these questions, you require high availability.

SharePoint provides the option for a highly available solution through the deployment and configuration of a SharePoint farm. A correctly configured SharePoint farm mitigates against the effects of unexpected downtime as well as planned downtime. When planning the SharePoint farm there are a few roles within the farm for which you can build in redundancy in order to provide high availability. These roles include the Application Server, the Web Front End Server and the Database Server. Most organizations require redundancy at the Web Front End role and this will dictate a baseline configuration for the SharePoint farm. However, additional factors will help define the baseline farm topology such as the requirements for redundancy of Application Servers and the operations performed by Application Servers. The Database Server role affects the overall availability of your solution more than either of the other roles. If a database server fails, your solution availability may be dependent on the restoration of that database server. This can require significant effort depending on how your SQL Server is configured. It is for this last role that the three questions above are most pertinent. If your answer is yes to any of these then you

should consider redundancy at the Database Server role. Lastly, it is important to note that a SharePoint farm offers the flexibility to promote and demote the WFE and Application server roles and responsibilities as the demand requires it. This provides the capability for scaling as the demand or need grows.

Defining Security Requirements

It will be important to define the methods for authentication to the SharePoint environment up front. This will be a vital step in reducing the effort spent during later stages of implementation, on troubleshooting the security implementation. SharePoint supports Windows authentication as well as ASP.NET Forms Based authentication. This provides the ability for use of the security framework that is already built into Windows and widely used as well as the ability to tap additional sources or data stores as places where credentials are stored and authenticated against.

The City of Grand Rapids should consider the requirements for authentication to the various solutions that might be hosted in a SharePoint environment. This might range from the employee intranet, to a vendor/citizen extranet, to the public facing City of Grand Rapids site. The authentication requirements for each of these may be different depending upon the requirements for management of users or the sensitivity level of the information being provided. It is important to note that SharePoint provides a platform for flexibility in this regard and these options must be considered in order to provide the levels of service that may be required by the various departments within the City of Grand Rapids.

In addition to authentication other security configurations should be considered when dealing with sensitive information. Because the SharePoint platform resides on a Microsoft Windows Server foundation and utilizes Internet Information Services (IIS), it makes leveraging the underlying framework for Secure Sockets Layer (SSL) and certificate based security schemes a simple configuration task.

Finally, when planning for security, the City of Grand Rapids should take inventory of any applications, existing or future, that might require the use of a single sign-on (SSO) implementation. Some common SharePoint based SSO scenarios include Business Data Catalog and Web Parts, Excel Services, InfoPath. Additionally other SSO scenarios might include connectivity to other web applications or legacy systems such as SAP, Siebel or BizTalk.

Defining Capacity Requirements

Planning for the capacity of a SharePoint environment involves defining the current and future needs of the implementation, and ultimately choosing the hardware and software that can meet the estimates for current and future needs. You must also ensure that your SharePoint sites can support the throughput targets with acceptable response times, which may be based on any defined Service Level Agreements (SLAs). Scale and Throughput are the two capacity guidelines that should be used when planning for the capacity of a SharePoint environment.

Throughput measures the number of transactions per second that a server can handle. This measurement is then used to extrapolate the number of simultaneous use by modeling typical user behavior. As a general rule of thumb we can use 1 transaction per second will map to 1000 users. This formula is derived by applying the following model for user behavior:

- 1000 users
- 10% peak concurrency
- 100 simultaneous users (10% of 1000)
- 100 seconds per request per user (36 requests per hour per user)
- 100 simultaneous users/100 seconds per user per transaction
- 1 transaction/second

The capacity of a SharePoint environment is also affected by the scalability of the implementation. Scalability is how many objects can be created in a given scope. One example would be the number of documents per folder. There are few hard limits and most of the scale guidelines are determined by performance. You may exceed the guidelines, at which time you may find degradation in performance of the system. In a SharePoint environment one of the most important scale dimensions is the number of site collections per database. This will depend on the number of indexes on the database. As the number of site collections increases, the performance of the system will degrade. As a general rule, performance does degrade faster beyond the 10,000 site collection mark and drops below 100 responses per second beyond the 50,000 site collection mark.

When planning for capacity and keeping these guidelines in mind, the three areas of planning focus should be user capacity, data capacity and search and index capacity. When planning user capacity, the City of Grand Rapids should develop a usage profile to determine the number of operations performed by an average user within a given day. When planning for data capacity, storage requirements should be developed that will support a current deployment as well as for expected future growth for the next two years. Finally, when planning for search and index capacity, a search profile should be created based on search patterns of the users, the volume of data to crawl should be estimated, and requirements for content freshness and crawl windows should be defined.

Defining Performance Requirements

The overall performance of your SharePoint environment will be most affected by the performance of the underlying database server and databases. As you develop a capacity plan it is important to create a size limit for content databases. This will enable you to efficiently backup the databases as well as alleviate user issues down the road. You should use the information defined during the scalability planning to help determine the amount and size of content that will live in the SharePoint environment. This sizing will help you to determine the appropriate number of content databases and size limitations to be applied in the SharePoint farm.

Planning for Disaster Recovery

Backups are required in the workplace today in order to protect against any unforeseen event or circumstance that may warrant a database restore or complete disaster recovery. For this reason it is important to develop plans and procedures for recovering from a failure before one occurs. This will help to minimize the loss of productivity in the event of a server crash or other forms of data loss. An effective disaster recovery plan should reflect a thorough strategy for based on the data protection requirements of the City of Grand Rapids as well as the departments within.

Within a SharePoint environment there are several data stores, and depending on the SLA defined, you may not need to back up every store on the same schedule. When planning the backup strategy for this environment it will be important to understand the different areas that can be backed up (SharePoint databases, Search Indexes, WFE Servers, WSS Sites, and Personal Sites) as well as the different methods or tools that can be used to back these up (Recycle Bin, stsadm utility, SharePoint products and technologies backup and restore utility, SQL Server Backup and Restore, third party tools). Typically, a blend of these tools is used to develop a comprehensive strategy for handling disaster recovery.

SHAREPOINT FARM CONFIGURATION

Typical activities performed in order to stand up a SharePoint farm environment include steps to first prepare for the SharePoint installation. Among these steps are:

- Defining the solution architecture
- Identifying the hardware that will be utilized
- Installation of the operating systems and service packs
- Create Active Directory service accounts to be used within the farm
- Installation and configuration of the SQL Server/Cluster

Once the environment has been prepared, SharePoint can be installed and configured. This typically takes place by first installing the primary Web Front End server and creating the farm instance. Subsequent installations on additional machines in the farm will be “joined” to the existing farm instance that has been created.

RCM Technologies recommends that the City of Grand Rapids with guidance from RCM, perform the steps to prepare the SharePoint environment in compliance with server provisioning and setup process and methodology at the City of Grand Rapids. Once the environment has been prepared, RCM Technologies resources can perform the SharePoint farm installation and configuration in an interactive fashion so as to transfer knowledge to resources at the City of Grand Rapids.

SUPPORT PLANNING

It is important to plan for support of the SharePoint environment from the beginning. This should include considerations for monitoring the performance and activity on the SharePoint farm as well as for basic maintenance of the farm and servers in the farm. SharePoint offers some analytical reports that will provide data and statistics relative to the site usage on the SharePoint farm. It is also recommended that

other system monitoring tools be used to measure and report on the health of the servers themselves (disk drives, capacity, etc.). A comprehensive backup strategy should also be put into place which will support the requirements defined in the SLA. Implementation of a solid backup strategy will facilitate basic maintenance of the environment as it will keep transaction logs from growing out of control. Additionally, basic policy can be put into place which can provide guidelines for archival or removal of SharePoint sites that have become deprecated or are no longer used.

Replace AntFarm

NEW SITE STRUCTURE AND DESIGN

Information Architecture

A simple and intuitive information architecture ensures users can find what they need, when they need it. Microsoft Office SharePoint Server 2007 allows for the information to be structured and organized into a hierarchical or flat model of different sites, sub-sites and pages. Additionally, dynamic navigation tools and controls are provided for optimal user experience.

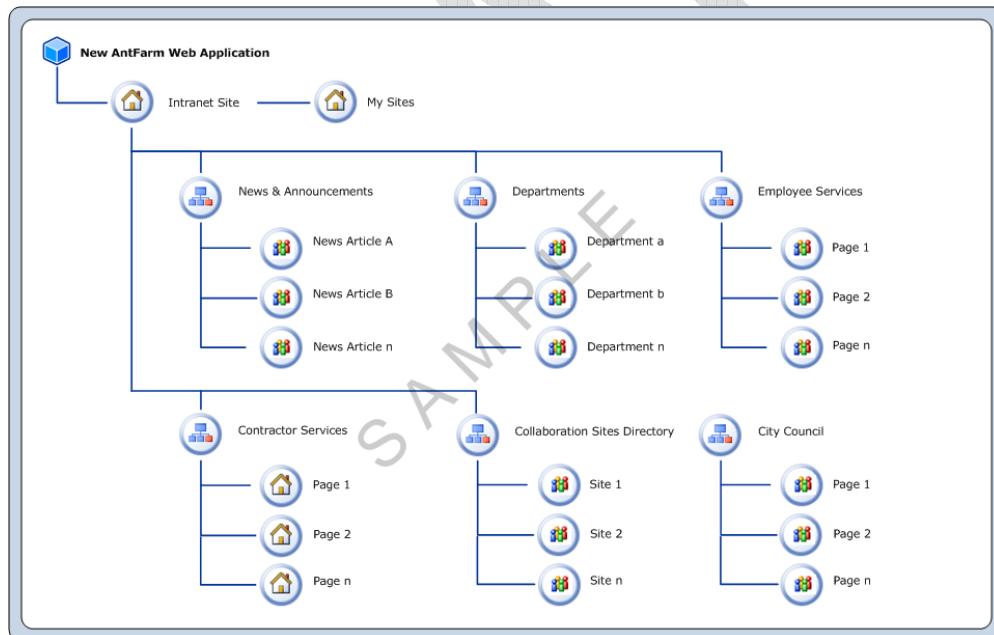


Figure 3: Sample High Level Information Architecture

Look and Feel

Microsoft Office SharePoint Server 2007 provides a great deal of flexibility in customizing the look and feel for a site. Additionally, templates provide a very effective approach when a consistent look & feel and user experience is desired.

When tailoring a site it is important to identify the key visual aspects that will make up the site or organization brand. This may be a simple set of colors, fonts and graphics that can be applied to make up the site's theme.

BASIC INFORMATION MANAGEMENT

Content Publishing

Provide each department the ability to publish and manage their own content. The system will allow the City of Grand Rapids to implement centrally managed rules that govern the content publishing process, but ultimately the process of creating new content could be governed at the department level. Each department could make determinations about who is allowed to publish content, and possibly who needs to approve that content before it becomes available to the general user population.

- Create pages or sites
- Add text, images or web parts to pages
- Restrict access to users or groups of users
- Define who can submit and/or approve content

Document Management

The solution must provide the City of Grand Rapids with a tool that can provide document management capabilities to all departments. This includes check/in, check/out, security, and versioning for all allowed file types. Departments at the City of Grand Rapids require the ability to structure their document storage in logical ways that may vary from department to department.

- Shared documents and files
- Add meta-data to commonly used documents
- Lock a document for editing
- Review and restore a previous version of a document
- Provide library specific templates for the creation of documents
- Provide multiple views of a single library

Access to Commonly Needed Content

The new City of Grand Rapids' AntFarm will contain many different types of information and functionality, published by different departments across the organization. The site hierarchy itself will contain many sub-sites and areas where content can exist.

Because of the potential depth and complexity of the site, it is important that users do not have to know where to go within the portal structure in order to find a particular type of content. For example, forms may be published by HR, Public Safety or the IT department. A user should not have to remember where to go to find a particular form. Rather, they should be able to navigate to a central repository where they have access to all forms published across the city that they have rights to access.

This will be achieved by implementing "Content Types", a feature of MOSS that will allow information to be categorized and sub-categorized by its attributes. For Example, "Forms" would be a Content Type that has common attributes (like Title, Publisher, Form Type, etc) that apply to content created by all departments that create forms. Additionally, "HR Forms" could be a Content Type used only by HR and may have extended attributes that are unique to the types of content that HR Forms represent. Content Types can be easily "rolled up" or summarized on pages within the Intranet site. This will allow similar Content Types (like Forms) to be accessed from one central location within the site, even though the content itself may actually reside and be managed in disparate areas of the site.

- Ability to roll up data located in separate lists or sites within the same site collection
- Ability to add and sync documents from 1 library to multiple libraries

BASIC INTERNAL COLLABORATION

Collaboration Sites

In addition to providing an internal face for each department, the portal must also provide collaborative areas for each department or user group within the district. These collaborative areas may be used for shared file storage, team meeting spaces, project management sites or any other collaborative purpose. Access to these areas should be restricted to the users within a department or group, and the structure and makeup of these sites will be "owned" at the department level.

- Ability to create team-size sites based on templates
- Ability to invite users to team sites

BASIC PERSONALIZATION

Role-based Access

When users publish content, they will have the option of targeting information to various Audiences. Audiences are users who share common attributes, such as a role, building location or department. Audiences will be defined based on structure and topology of the City of Grand Rapids' Active Directories

and Profile properties. A user can be a member of multiple audiences. When a user logs into the portal, the information that they see will be in part as a result of their Audience memberships.

- Ability to target navigation elements
- Ability to target web parts and information

My Sites

The new AntFarm will provide a My Site for all employees. My Sites are personal sites that contain unique information for each user. My Sites will be owned by each user and will provide them with the ability to:

- Access RSS feeds
- Access Collaboration Sites they are a member of
- Track colleagues activities and updates
- Access relevant external applications or resources (html link)
- Manage a personal collection of documents and files
- Manage their basic profile information

ENTERPRISE SEARCH

The system must provide a robust search capability to allow users to search for and locate content from multiple sources. These sources include AntFarm content, external web sites (e.g.: public website), and potentially file systems.

- Include or exclude file types for indexing
- Search documents content (supported file types) as well as meta-data
- Search subsets of the index via Search scopes

Migrate GRCity.us

REPLICATE SITE STRUCTURE AND DESIGN

Leveraging the Microsoft Office SharePoint technologies, the current GRCity.us website structure and design will be replicated on the new platform. The intent is to create all required templates and pages to provide the same end-user experience on the public website. Likewise, templates will be created so they maintain layout and content organization capabilities for the website authors.

CONTENT MIGRATION

All content available on the current GRCity.us website will need to be migrated over to the new platform. This process can be handled in a variety of ways including manual entry/cut-and-paste of the information on the new templates or a custom migration process leveraging the current GRCity.us content database and the SharePoint API.

Both approaches require adequate planning in order to ensure consistent results. In most situations, and due to the costs of developing a custom process, RCM recommends a custom tool approach only for content adhering to commonly used layouts and patterns, and a manual process for all other content.

BASIC INFORMATION MANAGEMENT

Content Publishing

Provide each department or GRCity.us content owner the ability to publish and manage their own content. The system will allow the City of Grand Rapids to implement centrally managed rules that govern the content publishing process, but ultimately the process of creating new content could be governed at the author level. Each department could make determinations about who is allowed to publish content, and possibly who needs to approve that content before it becomes available to the public.

- Create pages or sites
- Add text, images or any other content to pages
- Restrict access to users or groups of users
- Define who can submit and/or approve content

The current rules and process in place to manage the GRCity.us website content can be replicated a new set of rules can be created and configured if required.

Document Management

The solution must provide the City of Grand Rapids with the ability to make documents and files available on the public website. The solution will also provide the ability to structure document storage in logical ways that may vary from department to department.

ENTERPRISE SEARCH

The same capabilities as provided with the new AntFarm can also be leveraged for the public website. This includes a robust search capability to allow users to search for and locate content from multiple sources. These sources include website content, external web sites, and potentially file systems.

- Include or exclude file types for indexing
- Search documents content (supported file types) as well as meta-data
- Search subsets of the index via Search scopes

Ensure Success

KNOWLEDGE TRANSFER

RCM is an experienced provider of business process assistance, knowledge transfer planning and delivery services specializing in Microsoft technologies. RCM's typical knowledge transfer recommendations include a combination of conventional classroom-based learning, performance support tools and customized training materials.

The RCM knowledge transfer strategy for the City of Grand Rapids' portal solution will be based on the following tenets:

- Training should be based on the organization's processes, not just focused on the technology
- Training must address different levels and consider different learning styles
- Adult learning theory dictates training must be interactive; adults learn and master new skills with participative activities
- Full knowledge assimilation requires engagement of core internal resources (City of GR)
- The training solution must consider not only the initial rollout but also the ongoing support for new and existing users
- Mastery of new skills requires training that addresses the spectrum of learning including: initial, continued, remedial, upgrade and transferred knowledge

Process Focused Training

The RCM approach starts with understanding current and future processes. Particular attention is given to understanding the gap between current and desired behaviors and actions so the educational program specifically speaks to these needs with practical examples in training and reinforcement in the "live" environment so technology is used to its full potential.

Additionally, critical success factors will be established around process objectives allowing ongoing measurement of deployment success.

Consideration of Learning Styles

Adult learners require active learning facilitated by a training structure. They need practical examples, discussion and “hands-on” involvement to assimilate process changes and new skills into their personal tool set. The RCM knowledge transfer/training approach envisions significant interaction and hands-on learning.

Levels of Training

RCM recognizes in a project of this size and scope, multiple levels of training will need to be incorporated. This includes delivering training focused at skills competency, context and leadership.

Knowledge transfer must also address ongoing performance support. RCM will provide high quality instructional materials and ‘just in time’ performance support available for later use.

City of Grand Rapids Involvement

It is important to recognize that the full rollout and adoption of a large solution in the City of Grand Rapids’ users and staff community will require significant investment of City of Grand Rapids resources. As a result, RCM’s knowledge transfer/training approach strives to achieve an optimal mix of client involvement balanced against resource constraints.

ROLLOUT PLANNING

Gather Feedback

As users and departments leverage the portal and acquire experience with its features and functionality, each may develop a different set of knowledge, feedback and vision. It is important to gather, organize and prioritize this feedback in order to better plan the future phases and improvements of the portal implementation, ensure alignment at the organization level and provide adequate support.

Below are risks associated with a disconnected portal feedback:

- Lack of centralized technical support – as new features are being made available, it is important to ensure that organizational wide support and knowledge is available in the case of issues arising or troubleshooting being required. Isolated knowledge of specific functionality may lead to delayed resolutions and frustration with the use of the portal
- Lack of readiness for using additional functionality – the rollout of additional functionality should be handled with the same attention to preparation and knowledge transfer as the initial rollout to ensure maximum user adoption. If an isolated rollout of functionality (i.e.: single department or group) is required, it is recommended to expose the process to other groups in the organization

Portal Committee

In order to prevent or address the potential issues and challenges described above, it is recommended for the City of Grand Rapids to establish a Portal Committee or a group of individuals to oversee the portal implementation and usage on an ongoing basis. Typically, this committee will include representatives of various internal organizational groups such as Communication, IT, Project Management, HR and Executive. The goal of this committee is to define, audit and update the portal usage processes in order to ensure user adoption and return on investment.

Below are main areas of action for the committee:

- Portal Usage Policies – Create, enforce and update a set of policies for the usage of the portal. The policies should cover the following areas:
 - Information Security – for example guidelines regarding what information can be shared with the portal’s external users and what information should be restricted to the city’s employees
 - Content Types – guidelines regarding how the different types of content (i.e.: Announcements, Events, Training Documents, etc.) should be handled on the portal and how content managers should store and expose this information in SharePoint.
 - Information and Content Distribution – guidelines regarding what is appropriate to store on the portal and any policies regarding copyrighted materials and potentially offending content
 - Feedback Loop – guidelines regarding how users, content managers and management can provide their feedback on the portal implementation to ensure proper documentation, prioritization and response.
- Portal Release Plan – Create and update a Portal Release Plan to outline the future enhancements and changes to the implementation. The plan should provide the following information:
 - Features Prioritization – a list of desired features and suggested functionality in order of importance
 - Phases Overview – a high level timeline with proposed releases of enhancements and modifications

Portal Implementation Health Check – Monitor with the help of IT support and the different departments the current issues, complaints, successes and failures of the implementation in order to ensure appropriate action is taken and sufficient support is available. This also provides the organization with a centralized conduit for all portal related status information.

IMPROVE SERVICES

Deploy Advanced Features

ELECTRONIC FORMS PILOT

The solution will provide the ability to create and publish online forms to collect users’ data for processing. This feature allows for an organization to improve data collection by providing a more flexible and consistent user experience, and maximize business processes by integrating back-end systems and enforcing workflows.

Forms can be used to collect data from anonymous users (i.e.: public website) or authenticated users (i.e.: vacation request form for employees). RCM recommends a pilot for both use cases.

WORKFLOW PILOT

Out-of-the-Box Workflows

The solution will provide the ability to apply readily available workflow for controlling the publishing of content. This feature can be enabled for a specific set of content or for specific areas of a portal or website. Out-of-the-box workflows include feedback collection or basic approval as illustrated below.

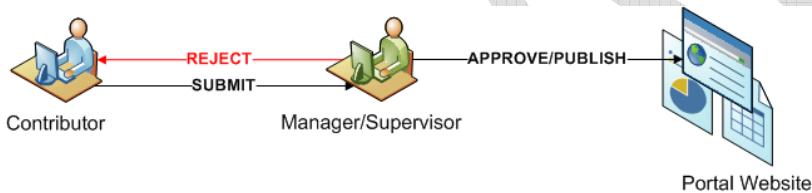


Figure 4: Out-of-the-Box Approval Workflow Sample

Custom Workflows

The solution will provide the ability to develop custom workflows that support complex processes and integration requirements. The primary goal of a custom workflow is to improve consistency of a particular process and ensure adherence to state or city mandated requirements. A sample representation of a custom workflow is shown below, it defines the sequence of events as well as the role-based activity rules that the workflow is enforcing:

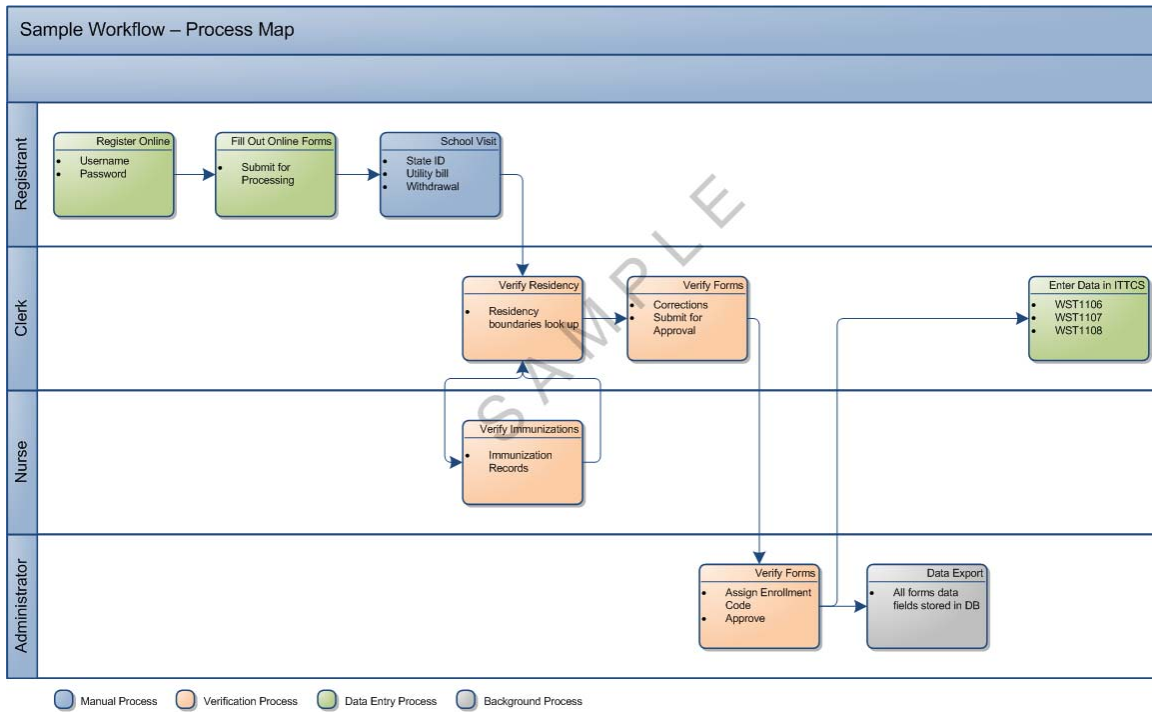


Figure 5: Custom Workflow Sample

RCM recommends a pilot for both Out-of-the-Box and Custom workflows.

ADVANCED INFORMATION MANAGEMENT

This set of activities focuses on the deployment of advanced information and content management features such as:

- Records management – rules and policies to help meet regulatory or legal requirements
- Document conversion – conversion of documents into the html format
- Excel services – display of Excel spreadsheets via web interface only
- Content publishing and deployment – scheduled publishing of information

ADVANCED COLLABORATION

This set of activities focuses on the deployment of advanced collaboration features such as:

- Blogs – ability to easily post articles and review readers comments
- Wikis – ability to easily create a web page for collaboration and annotation purposes
- Surveys – ability to collect feedback from a wide or specific user base
- Collaboration sites templates – ability for users to create sites based on consistent and recommended practices

ADVANCED PERSONALIZATION

This set of activities focuses on the deployment of advanced personalization features such as:

- Advanced user profiles – ability to store custom user profile information
- Self-service subscriptions – ability for users to subscribe to an audience or group for targeted information display

Re-face GRCity.us

CONCEPT CREATION

This process focuses on creative concepts and design compositions, production of code and templates and integration into the Microsoft SharePoint platform as described in the flow below:

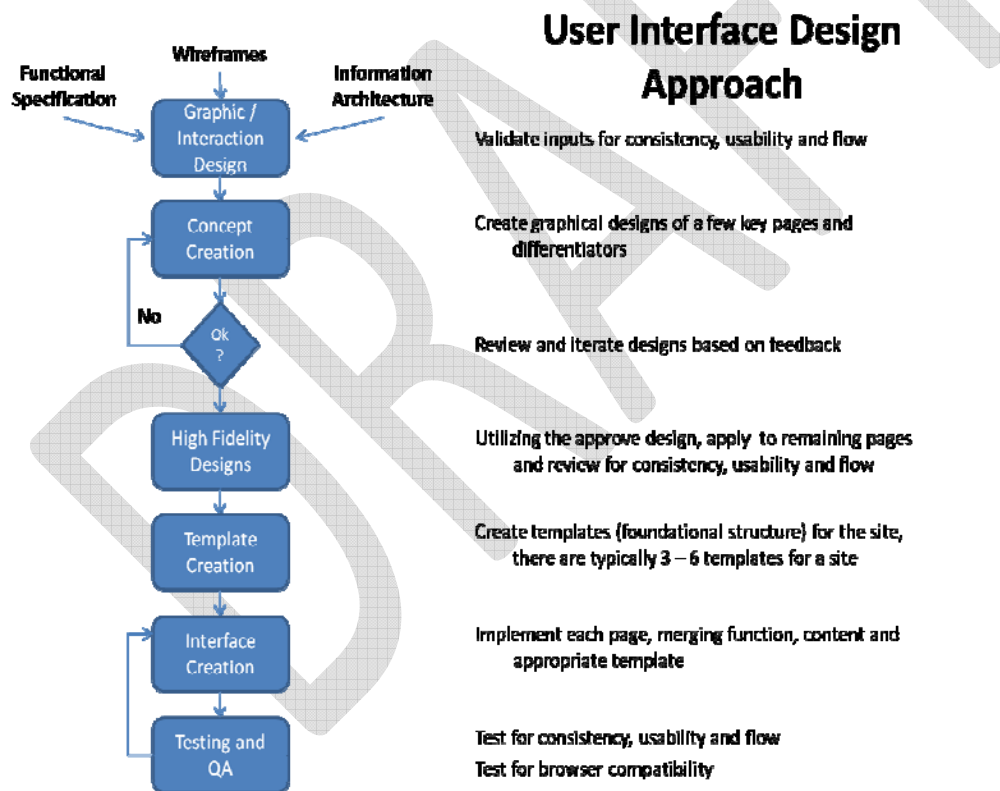


Figure 6: User Interface Design Approach

Microsoft Office SharePoint Server 2007 provides a great deal of flexibility in customizing the look and feel for a site. The appropriate level of knowledge and understanding is required in order to implement

significant look & feel changes. Ultimately it will depend on the look & feel requirements, but changing the look and feel of a SharePoint site typically will involve modification and/or creation of the following artifacts:

- Master Pages
- Page Layouts
- Style Sheets
- Images/Graphics
- Themes

All of these elements are used in concert to implement a consistent and customized look and feel across a SharePoint site. When tailoring a site it is important to identify the key visual aspects that will make up the site or organization brand. This may be a simple set of colors, fonts and graphics that can be applied across the board to make up the site's theme. Often times this brand can be applied across the board to all sites within an organization (internet, intranet and extranet). In addition to the basic brand for the organization, specialized artifacts may be implemented on a public facing (internet) site that will do more to engage and interest users. This may be a highly customized home page that utilizes a custom page layout or even animations (e.g.: Silverlight or Flash).

A recommended approach for the City of Grand Rapids would be to identify a basic brand that would be applied across all sites, thereby giving a consistent look & feel to the entire City of Grand Rapids web realm. This brand could and should be extended on the public facing site to include more customized page layouts, rotating graphics and potentially Flash animation in order to attract and engage users. Much of the current branding and look & feel from the existing City of Grand Rapids public site could be used for these purposes.

NEW SITE STRUCTURE AND DESIGN

Along with a new "face" or graphical design for GRCity.us, RCM proposes to re-architect the information made available on the site. This effort will focus on leveraging to its full potential the extensive set of features offered by the new platform. Specifically, the ability to "roll-up" or display information throughout the hierarchical site model (i.e.: department page>department site>home page) and providing end-users with a robust and intuitive search interface.

MYGRCITY.US DEPLOYMENT

The concept of a MYGRCity.us offers the ability for the city to offer its residents with the ability to subscribe and register for a website userID and gain access to personalized information and features.

Examples of personalized information and features include:

- Ability to subscribe to topics of interest, email notifications and reminders, newsletters
- Ability to readily access neighborhood specific news and announcements, events
- Ability to easily report graffiti, neighborhood nuisances, disabled vehicles, road conditions or communicate with elected officials
- Ability to securely aggregate online services information such as property, tax or water bills

Additionally, the deployment of a MYGRCity feature would strengthen and improve the ability for the city and its staff to communicate more effectively with the residents.

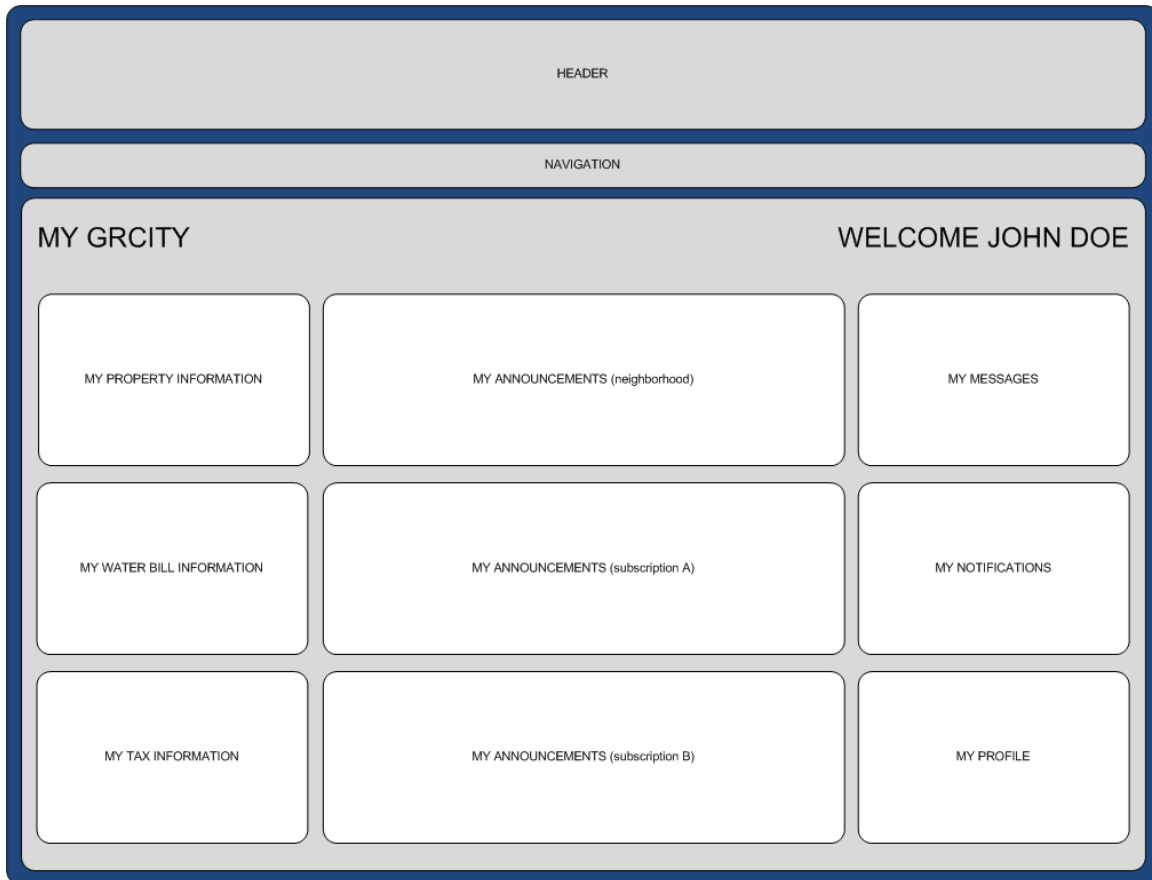


Figure 7: Sample MYGRCITY Concept

Ensure Success

KNOWLEDGE TRANSFER

See previous Knowledge Transfer Section pg.15

ROLLOUT PLANNING

See previous Rollout Planning Section pg.17

INTEGRATE AND MEASURE

Deploy Business Intelligence

Once a SharePoint environment has been established the City of Grand Rapids should be prepared to take advantage of all of the available features. SharePoint comes with many out of the box features which will certainly be used immediately upon implementation of an Intranet portal. However, there are additional features that must be explored and may indeed prove to be of use to the City of Grand Rapids. Among the features that can be utilized are various methods for Integration, Ad-Hoc Reporting, Dashboarding, and Forms and Workflow.

INTEGRATION PILOT

Integration within a SharePoint environment is a very broad topic. There are many options for integration with other systems and applications. Some of these options include Single Sign-On, Business Data Catalog (BDC), Reporting Services Integration and Search Integration.

Single Sign-On integration can be used to provide access from the SharePoint portal to other web based applications without the need for the user to logon to those other applications. The Single Sign-On infrastructure supports the creation and management of application specific user credentials in a secure self service fashion so that when the user accesses a Single Sign-On enabled application, SharePoint will authenticate to the application with the stored credentials of the user, thereby providing a seamless transition from the portal to the external application.

The Business Data Catalog and supporting web parts can be used out of the box to surface data from third party, vendor specific, or custom data stores. Essentially this means that data from HR systems, Relational Data Stores, or other data stores can be retrieved and used inside a SharePoint portal, either for research and reporting purposes, or even for the purposes of updating the data.

Reporting Services integration can be used to more seamlessly surface SQL Server Reporting Services Reports in the SharePoint portal. Specifically, this integration allows the City of Grand Rapids to deploy and manage reports within SharePoint document libraries, thereby reducing the overhead required to manage the reports and security for the reports in a separate interface (Report Manager).

Search integration can be used in a number of ways to include pertinent data and information in the search results for the SharePoint portal. SharePoint comes with some out of the box functionality for indexing the content within the farm. This is used to enable the ability to search the content of the farm. In addition to this out of the box functionality, SharePoint Search can be configured to crawl and index sources other than the SharePoint farm. Among these are websites outside the SharePoint farm, network and file shares, and data surfaced through the Business Data Catalog.

DASHBOARD PILOT

Dashboards are generally used to communicate statistical data in a visual manner. Components of a dashboard typically include items like scorecards, key performance indicators (KPIs), charts, graphs, gauges and even pivot tables. There are different methods for creating dashboards and different options for sourcing the components of a dashboard. Typically tools like Reporting Services, Excel Services, and Performance Point Server are used to create dashboards. However, there are third party components which can also provide components for use on a SharePoint based dashboard.

An example of dashboard use might be for the purposes of indicating the financial status of the City of Grand Rapids. Scorecards provide the ability to define KPIs, which can then be used to determine the high level status of an analytical value as well as the ability to drill into the data that makes up the statistic. Dashboard data can also be targeted and secured based on user context. This would enable users for specific departments to view the same dashboard, on a main/home page, and see different data based on their role or department.

Dashboard data can also be sourced from a variety of data sources such as SQL Server, Oracle, other ODBC data sources, Analysis Services, or even Excel. Additionally, multiple data sources can be utilized on a single dashboard.

Before initiating a dashboarding project, it will be important to define the specific needs and security required around the data. It will also be important to determine where all of the data will come from. RCM Technologies recommends identifying one or two interested departments at the City of Grand Rapids for the purposes of creating a dashboard, thereby limiting the scope of the initial dashboarding effort and decreasing the risk associated with meeting the specific requirements of the target audience.

AD HOC REPORTING

Ad-Hoc reporting can be facilitated in a number of ways in a SharePoint environment. One method, mentioned above, would be the Business Data Catalog and supporting web parts, which can be used to create definitions for accessing custom data stores and subsequently use that definition to surface data on a SharePoint page. Additionally, Excel Services might be used to provide the ability for users to interact with Excel spreadsheets that are deployed to specific libraries in the SharePoint portal. Excel spreadsheets are used widely to provide access and reporting on various ODBC data sources. This access typically comes in the form of charts and pivot tables, which typically allow the user some level of interaction, such as filtering and choice of fields. This interaction can be enabled in a SharePoint page through the use of Excel Services, removing the need for users to have Excel installed on their workstations in order to work with the spreadsheets. Finally, SQL Server Reporting Services provides ad-hoc reporting capability through the user of a tool called Report Builder. If your users have the appropriate access in the SharePoint environment, they would have the ability to use the Report Builder tool. This tool allows users to create SQL Server Reporting Services reports in a simple drag and drop manner. This is enabled by a new component of SQL Server 2005 known as a Report Model. The report model abstracts the tables, fields, and relationships in a relational database into Entities, Attributes and Roles which can be used within the Report Builder tool.

DATA WAREHOUSING

Once the breadth of data integration is realized it may become beneficial to design and implement a data warehouse at the City of Grand Rapids or within departments of the City of Grand Rapids so that the various integration features can be taken advantage of on a broader basis. A data warehouse can be used to gather a wide range of data from one or more of the departments at the City of Grand Rapids, which could then be used to provide departmental or cohesive analytics through the SharePoint portal. As the data warehouse matures, additional data marts could be added and the data could be purposed for data mining. Ultimately the City of Grand Rapids will need to determine the overall objectives and requirements for a data warehouse. The important thing to consider is that the platforms and frameworks that support data warehousing and various types of reporting will be in place once the SharePoint environment has been implemented.

Ensure Success

KNOWLEDGE TRANSFER

See previous Knowledge Transfer Section pg.15

ROLLOUT PLANNING

See previous Rollout Planning Section pg.17

BUDGET

So the City of Grand Rapids can allocate budget and initiate a successful rollout of their portal initiative, RCM is providing the following Rough Order of Magnitude Estimate (ROME) to complete the activities described above.

Estimates below are based on past projects of similar scope and complexity and only include services costs; hardware, software, personnel or any other required expense are not included.

This ROME is for budgeting and planning purposes only, based on a time and materials project approach and does not bind either the City of Grand Rapids or RCM Technologies as the actual effort required could vary. This is not a proposal for services.

Phase and Activities	Estimated Effort	Estimated Cost
Establish Foundation		
Deploy New Platform	3 to 5 weeks	\$13,800 to \$23,000

Replace Antfarm	6 to 10 weeks	\$27,600 to \$46,000
Migrate GRCity.us	8 to 14 weeks	\$36,800 to \$64,400
Ensure Success	3 to 5 weeks	\$13,800 to \$23,000
Improve Services		
Deploy Advanced Features	8 to 14 weeks	\$36,800 to \$64,400
Re-face GRCity.us	8 to 14 weeks	\$36,800 to \$64,400
Ensure Success	2 to 4 weeks	\$9,200 to \$18,400
Integrate and Measure		
Deploy Business Intelligence	14 to 22 weeks	\$64,400 to \$101,200
Ensure Success	2 to 4 weeks	\$9,200 to \$18,400

REFERENCES

- City of GR - Portal Strategy and Roadmap - Baseline Assessment.doc