

Request for Information (RFI)# 16-16
for
Replacement Enterprise Land Development Management
Solution
Issue Date: September 10, 2015
Proposal Due Date and Hour: November 10, 2015 3:00
p.m.

Montgomery County Purchasing Department
755 Roanoke Street, Suite 2C
Christiansburg, VA 24073-3179

COUNTY OF MONTGOMERY, VIRGINIA
RFI # 16-16

ISSUE DATE: SEPTEMBER 10, 2015

Replacement Enterprise Land Development Management Solution
(TO BE COMPLETED AND RETURNED)

GENERAL INFORMATION FORM

QUESTIONS: All inquiries for information regarding this RFI should be directed to: Heather M. Hall, C.P.M., Procurement Manager, Phone: (540) 382-5784; faxed to (540) 382-5783, or e-mail: hallhm@montgomerycountyva.gov

DUE DATE: Sealed packets will be received until **November 10, 2015**, up to and including **3:00PM**. Failure to submit proposals to the correct location by the designated date and hour will result in disqualification.

ADDRESS: Packets should be mailed or hand delivered to: **Montgomery County Purchasing Department, 755 Roanoke Street, Suite 2C, Christiansburg, Virginia 24073-3179**. Reference the Due Date and Hour, and RFI number in the lower left corner of the return envelope or package.

Full Legal Name (print)		Federal Taxpayer Number (ID#)	Contractor's Registration
Business Name / DBA Name / TA Name and Address		Payment Address	Purchase Order Address
Contact Name/Title		Signature (ink)	Date
Telephone Number	Fax Number	Toll Free Number	E-mail Address

1.0 Intent of Request for Information (RFI)

The intent of this Request for Information (RFI) is to solicit information and budgetary estimates in anticipation of replacing our enterprise Land Development Management (LDM) solution.

While our enterprise LDM solution has served us well over that last eight years, it no longer fully meets our growing business use case. Nor does it have provisions to be web enabled except for very limited land development activities. Replacing our current LDM solution with a more web friendly solution will afford us the opportunity to enhance our citizens and business users' experience. Therefore, we desire to implement as a core function, a dashboard and customer-service portal to enhance query, initiation, and tracking of land development management activities.

In replacing our current LDM solution we will want to minimize implementation risk and maximize value to our internal staff and private citizens and business users. To that end RFI responses will be used to help formulate a strategy to replace our current enterprise LDM solution. The RFI is also intended to provide estimated budgetary costs for replacing our enterprise LDM solution.

RFI responses will not be considered as offers and will not be accepted by the County of Montgomery to form a binding contract. The RFI shall not limit any rights of the County, and the County reserves all its rights including, but not limited to, its right to elect not to procure the goods and/or services that are the subject of this RFI and its right to procure them from a respondent that has not responded to this RFI.

1.1 Current County LDM Solution Background

In 2007 after a lengthy process to define current and future state land development, planning and zoning, and permitting and inspections processes, Planning and GIS Services and Building Permitting and Inspections implemented an enterprise GIS centric land development management (LDM) solution.

The enterprise LDM solution is used by Planning and GIS Services for site plan and subdivision review and acceptance, planning and development, zoning and predevelopment review, special use permitting, variances and appeals, zoning code compliance and enforcement, and business sign permitting.

For our Building Permitting and Inspections department the LDM solution is used for building and trades permitting and inspections, erosion and sediment (E & S) control, and building code compliance and enforcement.

For other county departments and constitutional offices the enterprise LDM solution provides enhanced view, query, report, and printing capabilities for county building permits, annual building and trades permit summaries, land development, zoning, and subdivision related activities.

Our internal users can initiate new work activity using modular LDM database applications tailored for rezoning and special-use permits, site plans and subdivisions, code compliance and enforcement, business signage, residential and non-residential construction permits, and erosion and sediment control permits. The flexibility of our enterprise LDM solution has given our internal staff efficiencies of enormous magnitude.

Our citizens and business users also have benefited from an enterprise LDM solution. Major benefits include streamlined entry and faster processing and approval of building plans and permits and land development applications by internal staff. Paper site plans, subdivision plats, building plans, application materials, etc. can be scanned and attached to a specific LDM application, record, and land parcel. Received digital files can be attached directly.

The current enterprise LDM solution serves as a common repository for all land development activities and information.

The LDM solution has a Microsoft .Net mobile field data collection application. Records are checked out of the enterprise LDM database and copied to the field data collection application. The application is stand-alone and does not require a connection to the enterprise LDM solution. The field data collection application utilizes a tablet/laptop for outside office use.

For building and trades inspection, a web application was implemented to enable citizens, building contractors, and tradesman to request inspections and obtain via the web and email, inspection reports and certificate of occupancies. The inspections web application uses a smart phone, tablet, laptop, or desktop to initiate inspections requests, obtain results and query inspections status.

Please note that our two incorporated towns, Blacksburg and Christiansburg are not part of our enterprise LDM solution.

1.2 RFI Objectives

- Obtain knowledge about enterprise LDM solutions.
- Obtain knowledge about implementation strategies based on respondent's previous projects of similar scope, size and complexity. Learn of implementation success stories and failures from the respondent's experiences.
- Obtain knowledge about enterprise LDM legacy data conversion issues and successes.
- Learn of service delivery best practices from the respondent's experiences.
- Obtain knowledge about local hosting and alternatives such as software-as-a-service cloud hosting and pros and cons of each method.
- Obtain knowledge about enterprise LDM solution security designs and alternatives.
- Obtain budgetary cost estimation to assist with planning and budgeting activities.
- Formulate an enterprise LDM replacement solution strategy.

1.3 RFI Terms and Conditions

- a. This is a REQUEST FOR INFORMATION, only and should not be construed as intent, commitment or promise to acquire software, services, or solutions presented by RFI respondents.
- b. The County of Montgomery (County) will not be obligated to any respondent as a result of this RFI. The County is not obligated for any cost incurred by respondents in the preparation of the RFI. The County will not pay for any information herein requested nor is liable for any costs incurred by the respondents. For economy of presentation, special bindings, colored displays, promotional materials and the like are not required but if they are provided, the County will not be responsible for this cost.
- c. RFI responses will be used strictly by the County to gain current and future state knowledge for locally hosted and software-as-a-service enterprise LDM solutions and services to formulate a replacement strategy.
- d. RFI responses will be used by the County to develop an enterprise LDM replacement solution budgetary estimate. The budgetary estimates provided by RFI respondents are not binding. The budgetary estimates will assist the County in developing an enterprise LDM replacement solution strategy including legacy data conversion, solution customization, implementation, and ongoing maintenance.
- e. RFI responses unless stated otherwise shall become the property of the County upon receipt and will not be returned.
- f. The County cannot guarantee that it will not be compelled to disclose all or part of any response deemed a public record under the Virginia Public Information Act unless identified as confidential information.

g. The RFI will include a series of enterprise LDM replacement solution questions. The County requests that respondents reply in the same sequence and format. All replies should be submitted in short, clear, concise and complete statements. Respondents may submit their RFI responses and any subsequent answers to questions in digital form. (For responses that have confidential information, please see below.)

h. The County may request or respondents may wish to provide a demonstration of their LDM solution. The County encourages the use of web technologies for this purpose.

i. If respondents provide in-use references of their LDM solution, the County may contact the in-use references to assess the suitability of a respondent's LDM solution.

1.4 Confidential Information

Information received in response to this RFI may contain technical, financial, or other data whose public disclosure could cause substantial injury to the respondent's competitive position or constitute a trade secret. To protect such data from public records disclosure, the respondent should specifically identify the pages of the response that contain confidential information by properly marking the applicable pages and inserting the following notice in the front of the response:

"NOTICE"

"The data on the pages of this response identified by an asterisk (*) or marked along the margin with a vertical line, contain information which are trade secrets and/or whose disclosure would cause substantial injury to the respondent's competitive position. The respondent requests that such data be used only for the evaluation of its submitted response, but understands that disclosure will be limited to the extent that the County determines proper under federal, state, and local law."

In responses containing proprietary information, proprietary paragraphs and/or other data must be clearly marked as noted above. **The respondent should include a copy of the response with the confidential material totally blacked out or removed from the text so that one copy is available as public material. This information may, upon request, be released to the public. If the respondent removes text from the Public version, the respondent must leave the equivalent blank space so that the pagination matches the Table of Contents in the original (full version) of the response to the RFI. Within the blank space provide the following statement: CONFIDENTIAL INFORMATION REMOVED.**

The County assumes no responsibility for disclosure or use of unmarked data for any purposes. In the event properly marked data are requested, the respondent may be advised of the request and may expeditiously submit to the County a detailed statement indicating the reasons it has for believing that the information is exempt from disclosure under federal, state, and local law. This statement will be used by the County in making its determination as to whether or not disclosure is proper under federal, state, and local law. The County will exercise care in applying this confidentiality standard, but will not be held liable for any damage or injury that may result from any disclosure that may occur. The Respondent agrees to assume and pay for all costs incurred by the County, including attorneys' fees awarded by a court, if Respondent requests the County to resist disclosure of material provided to the County by the Respondent, provided the County determines the said materials are exempt under federal, state, and local law. Further, should you request that portions of your submitted response remain confidential and not be disclosed, please confirm your assurance to indemnify, defend and hold Montgomery County, VA by including the following statement in your cover letter:

"Respondent undertakes and agrees to defend, indemnify and hold harmless the County and any of its boards, officers, agents, and employees (collectively, the "County") from and against all suits, claims, and causes of action brought against the County for the County's refusal on the respondent's behalf to disclose trade secrets or other technical, financial or other information to any person making a request. Respondent's obligations herein include, but are not limited to, all attorney's fees (both in house and outside counsel), costs of litigation incurred by the County or its attorneys (including all actual, costs incurred by the County, not merely those costs recoverable by a prevailing party, and specifically including costs of experts

and consultants) as well as all damages or liability of any nature whatsoever arising out of any such suits, claims, and causes of action brought against the County, through and including any appellate proceedings. Respondent's obligations to the County under this indemnification provision shall be due and payable on a monthly, on-going basis within thirty (30) days after each submission to Respondent of the County's invoices for all fees and costs incurred by the County, as well as all damages or liability of any nature."

Failure to include such a statement shall constitute a waiver of a Respondent's right to exemption from disclosure. Note that wholesale use of headers/footers bearing designations such as "confidential", "proprietary", or "trade secret" on all or nearly all of a response is not acceptable, and may be deemed by the County as a waiver of any exemption claim. The identification of exempt information must be more specific.

1.5 General Information

We ask each responding vendor to please provide the following general information.

- Respondent profile, history, years in business, general business strategy, and alignment of corporate vision with the County's goals.
- Number of employees dedicated to creating, maintaining, and supporting your enterprise LDM solution.
- Previous experience implementing similar solutions for clients of a similar size and complexity including typical timelines.
- Key risk factors and critical success factors the County should be aware of as it plans for the procurement and implementation.
- Additional information the Respondent believes important about their company and LDM solution.

1.6 Specific Questions To Be Answered

The County is particularly interested in obtaining information on how your solution meets or exceeds the desired LDM replacement solution. Information provided will help the County understand suitable replacement LDM solutions. Responses will also help the County determine the implementation strategy to meet our LDM replacement solution goal and objectives, and prepare a budgetary estimate. Please use the succeeding RFI sections to help guide your answers as to how your LDM solution can meet our business case needs.

Please provide answers in sufficient detail to fully answer the following questions.

1. What implementation strategy would you employ that ensures a smooth transition and mitigates implementation risk transitioning from our enterprise LDM solution to your solution without interruption of business operations, loss or duplication of data and work, and staff productivity, and customer service?
2. Along with replacing the current enterprise LDM solution, the County desires to implement new business functionality. Using information in succeeding RFI sections, what are your implementation recommendations? Do you envision different implementation options for managing risk and cost?
3. Based on your LDM solution experience with customer service dashboards and customer-service portals, how would you implement a decision tree "wizard" to assist the citizen and business user to select the appropriate LDM activity, initiate an application or permit, collect the pertinent data, plans, or documents, and provide tracking information as an application or permit moves through the review, in process, approval, and sign-off completion?
4. Given the different functional aspects needed for a dashboard and customer-service portal (transactional, informational, interactive channels), to what degree would your LDM solution provide a seamless and consistent user experience?
5. How would your LDM offering handle non-parcel based LDM processes and activities?

6. How would you approach cross-platform interoperability with other county and LDM related applications? (i.e. Outlook email (MS Exchange), LGFS, CAMA, Official Records, ArcServer)
7. Based on your experience, what key roles, overall staffing needs, and other internal staffing considerations would you suggest for the County for implementing and supporting this project?
8. Please describe your LDM training curriculum for end user staff, LDM administrators, and IT support.
9. What performance metrics have you used in the past to measure the benefits of implementing replacement LDM solutions for self-hosted vs. cloud hosted service?
10. What would be the County's return on investment for acquisition vs. subscription service for your LDM solution?
11. What is the business and technical best practice for legacy data conversion of existing LDM solution records?
12. Please provide what IT environments are most suited for your enterprise LDM solution.
13. Current lifecycle age of your enterprise LDM solution.
14. Is your enterprise LDM solution original or was it acquired through acquisitions and mergers?
15. Please describe your enterprise LDM solution software upgrade policy and process.
16. Please describe your enterprise LDM solution software patch delivery policy and process.
17. If locally hosted, what failsafe disaster recovery process for recovering the solution and records in the event of a catastrophe?
18. While our towns are not part of our current enterprise LDM solution, the County can envision a future state where they may wish to share the same platform. What options are there for hosting multiple entities in one environment? Discuss benefits, challenges, and other points that the County needs to consider.
19. If the County pursued a replacement LDM solution with other counties, how would you envision partnering to deliver a comprehensive solution to save costs?

1.7 Budgetary Estimates: One-Time and Ongoing Costs

An important aspect of the RFI process is determining the costs and benefits of implementing an LDM replacement solution. Seeking budgetary pricing information will facilitate building a business use case for replacing our LDM solution. Therefore obtaining budgetary cost estimates will be critical.

The County seeks to gain an understanding of the potential costs associated with a solution that meets stakeholder requirements. Please indicate what your firm believes to be reasonable cost estimates associated with implementing a solution of similar size and scope based on prior experiences. The County realizes that any cost estimate provided will be limited to information included in this RFI and your prior experience. Please be advised that a cost estimate is for informational purposes only and will only be used to guide the budgeting process for possible procurement activities.

Please use the budgetary estimate table below. One-time cost estimates include all project costs leading up to final deployment. For ongoing costs, please provide an estimated annual cost. While the intent is to facilitate a budgetary cost estimate, please provide as much detail and explanation as appropriate to help the County with budgeting efforts.

With respect to implementation services, please provide typical unit costs, cost ranges, or other cost parameters that will help the County budget for key implementation activities such as:

Budget Estimate Categories

- Software license fee (unlimited site license, numbers of users, etc.)
- Project management
- Installation and Implementation
- Customization and enhancements

- Report and Inquiry development
- Third-party integration
- Cross-platform interoperability
- Legacy data conversion
- Training
- Hosting options: (Self hosted and cloud hosted)
- Annual Solution Maintenance and support
- Other reoccurring costs
- Other costs to be considered

Please provide any additional cost estimate information for any other key implementation and ongoing activities that you feel will assist the County in preparing a budget cost estimate.

Please clearly state any assumptions you have made regarding cost estimates. If your firm uses a different pricing structure, describe your pricing structure, key variables, and any assumptions made about your cost estimates.

1.8 Other Considerations for the County

Please provide any other information that you find relevant for the County to consider as it develops and implementation strategy.

If you do not have any additional information to add, include the following statement for this section: "THERE IS NO ADDITIONAL INFORMATION TO BE CONSIDERED".

2.0 RFI Submission and Point of Contact

Heather Hall, C.P.M., Procurement Manager
Telephone: (540) 382-5784
Fax: (540) 382-5783
Email: hallhm@montgomerycountyva.gov

2.1 Schedule of Events Description

RFI Issue Date

Date

September 10, 2015

Question(s) submission Deadline

October 22, 2015 X:XX pm

All questions must be submitted via email to Point of Contact.

Pre-RFI Submittal Meeting Respondent Forum (Optional)

October 8, 2015 ; 1:30p – 3:30p (EST)

Physical Address:

Montgomery County Purchasing Department
755 Roanoke St, Suite 2C
Christiansburg, VA 24073

Local Access: 540-382-5784

RFI Deadline

November 10, 2015 by 3:00pm (EST)

Please note that there will be no grace period for receiving late RFI submittals. Any RFI responses submitted after the deadline will be returned unopened marked with the date and time the submittal was attempted. No exceptions, even if it is due to the method of delivery. Please submit one hard copy and 3 digital format (CD or Jump drive)

3.0 Montgomery County Current Enterprise LDM Solution

The County's current enterprise LDM solution is based on a database design over a decade old. Early on customization was performed to make our solution comply with County LDM business processes. Enhancements and refinements have been done as needed since going live in 2007. Continuing to pay a vendor for further customization and enhancements to an old database design to meet the County's evolving business case needs and e-government initiatives is not a wise course of action.

Current enterprise LDM solution issues:

- Expensive modification and enhancement costs to meet County's changing business case needs.
- No citizen and business user access via dashboard, customer-service portal, etc.
- Mobile application for internal staff is not seamlessly integrated to core solution.
- Report creation and modification is time consuming and costly. No ad-hoc reporting capability.
- Core application is enterprise SQL database driven, but built on a decade old design.
- Third-party application integration is limited.
- No cross-platform interoperability for land ownership information and real estate property records.
- Core GIS integration requires costly runtime or end user licensing.
- Yearly software support is not commensurate with received benefits.

3.1 Current Land Development Management Solution Environment

Planning and GIS Services division uses our enterprise LDM solution for site plan and subdivision review and approval, predevelopment (zoning verification) review, rezoning and special use permitting, zoning variances and appeals, code compliance and enforcement, and business sign permitting.

Building Permitting and Inspections department uses our enterprise LDM solution for building and trades review, permitting, field inspections, and erosion and sediment control review, permitting, and site monitoring.

Building Permitting and Inspections has a mobile client field application semi-integrated with our LDM solution through a records check out/in process. They also have a third-party web application for citizens and business users to request and schedule inspections. The inspections request is processed, scheduled by inspections staff. An email is sent to the requester advising of an inspection date. Building and trade permit inspection results are provided via a smartphone, tablet, or other web connected device.

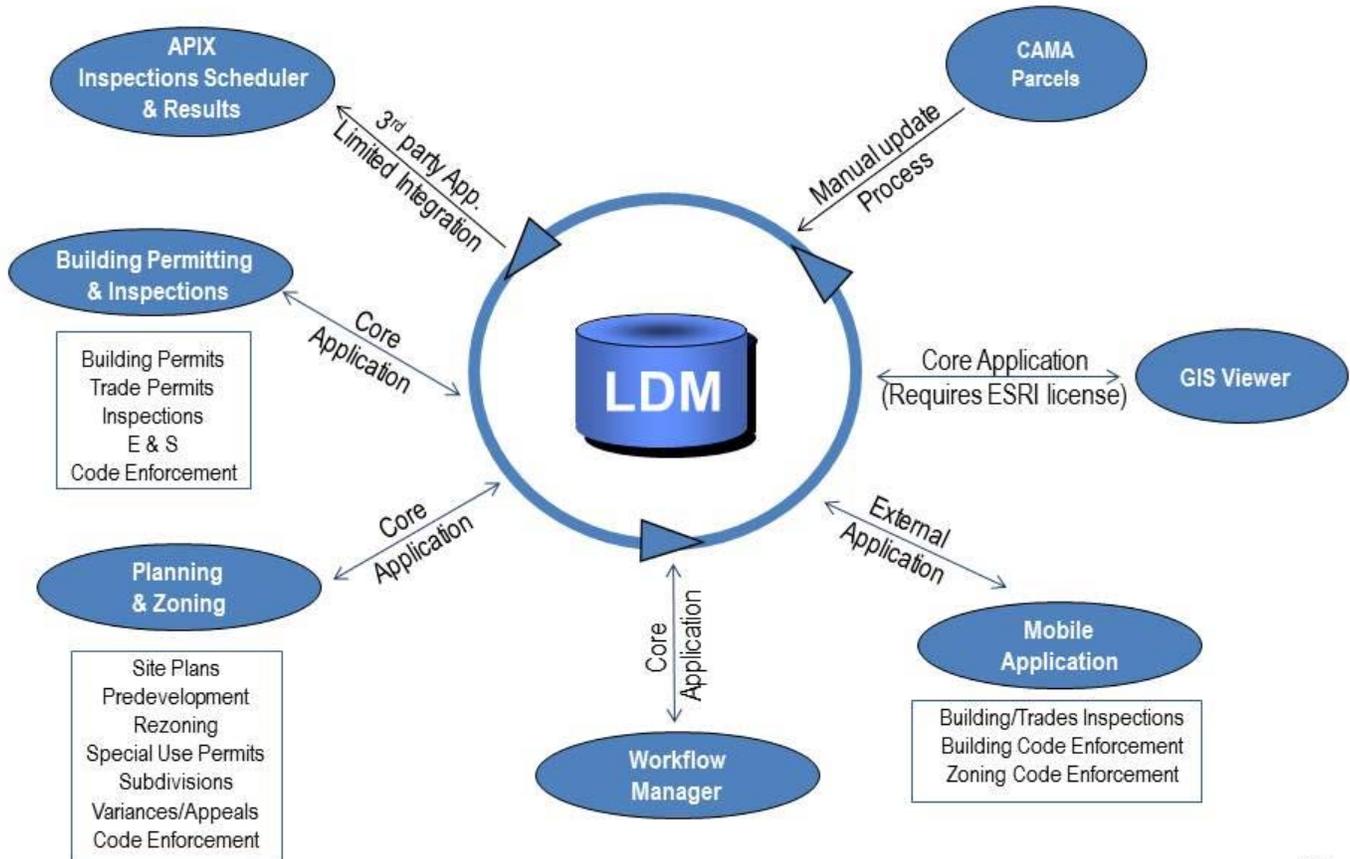
LDM solution users with editing permissions can initiate new work, enter or link previous/related work activities, link land parcel owner and applicant information, associate one or more site addresses, attach information, get email task notifications, receive/sign-off on assigned work tasks, give approvals, and query, review, comment, and print information relative to land development activities.

Other county and constitutional offices use our current LDM solution to view, query, report, and print individual building permits, annual building and trades permit summaries, and land development, zoning, and subdivision related activities.

3.2 Enterprise LDM Solution Environment (current state)

The diagram below reflects the current state of our enterprise LDM solution. While the enterprise LDM solution uses an old database design, our mobile field data collection application and the APIX Inspections Scheduler use current software programming techniques. The software used for the mobile field application is Microsoft .Net and HTML5 for the APIX Inspections Scheduler.

Montgomery Co LDM (current)



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4.0 Enterprise LDO Solution Stakeholders

Our current enterprise LDM solution has stakeholders, both internal and external.

4.1 Internal Stakeholders

Primary County enterprise LDM solution stakeholders are:

- Planning & GIS Services
- Building Permitting and Inspections
- Information Technology Department

Other County enterprise LDM solution stakeholders are:

- Real Estate Assessment (Commissioner of Revenue)
- Engineering and Regulatory Compliance
- Public Service Authority

4.2 External Stakeholders

External LDM Solution stakeholders are:

- Building and trades contractors

- Professional engineers, land surveyors, architects, and registered land disturbers
- Land developers
- Real estate professionals
- Virginia Utility Protection Services
- NRV Health District - Environmental Health
- Virginia Department of Transportation (VDOT)
- Citizens

5.0 Current Enterprise LDM Business Metrics

As part of implementing an enterprise LDM solution in 2007, we documented business processes for internal staff. In doing so cumbersome and inefficient work methods were eliminated or customized for site planning, rezoning, special use permits and subdivisions and building, trades, and erosion and sediment control permitting.

Once we implemented our enterprise LDM solution it radically transformed the way our staff entered, managed, and completed their work. The enterprise LDM solution also changed how our citizens and business users interacted with the County for land development and permitting activities. This has resulted in more effective and shorter land development and permitting processes for our citizens and business users.

County tax parcels by jurisdiction (July 2015):

- Montgomery County (unincorporated area): 19,705
- Town of Blacksburg (incorporated): 11,004
- Town of Christiansburg (incorporated): 12,810

Annually, the County (unincorporated area) processes:

- Predevelopment letters (zoning verification): 400+
- Subdivisions (all types): 70+
- Rezoning requests: 5 - 10
- Special Use Permits: 10 (+/-)
- Variances and Appeals: 3 - 5
- Signage: 3 - 5
- Major Site Plans: 5 – 10
- Home Occupation Business requests: 10+
- Code Compliance/Enforcement actions: 50+ (includes repeat offenders & cases that get reopened)
- Building permits: 200+
- Trade permits: 650+
- E & S permits: 60+
- Non-parcel based LDM activities 10-20

LDM records (1995 through present):

- Predevelopment letters (zoning verification): 3,540
- Subdivisions (all types): 3,333
- Rezoning requests: 2,238
- Special Use Permits: 1,511
- Variances and Appeals: 349
- Business Signage: 42

- Site Plans: Included with Predevelopment
- Home Occupation Business requests: 116
- Code Compliance/Enforcement actions: 85
- Building permits: 11,580
- Trade permits: 13,992
- E & S permits: 403

Note: Our two towns (Blacksburg and Christiansburg) do not participate in our LDM solution

6.0 Replacement Enterprise LDM Solution Core Objectives

The County is aware that many advances have been made with respect to information technology, especially the use of enterprise solutions and the Internet as a way to conduct business, host solutions, and communicate information.

The County is also aware that since implementing our current enterprise LDM solution in 2007, changes to internal work processes, ordinance and code changes, and Commonwealth mandates such as on-line permitting have made our current LDM solution expensive to update and tenuous for future web use.

The County is also aware that further modification of our existing enterprise LDM solution or selecting as a replacement, older technology will ultimately constrain or deny us and our citizens and business users the full potential of a robust long term LDM solution.

The County is fully cognizant that a new LDM solution and cost paradigm is necessary and is desirous to implement a strategy to give our internal users, citizen and business user's greater capabilities and more efficiency.

Goal:

The County's overall goal in replacing our current enterprise LDM solution is to obtain a more efficient, cost effective, web-enabled, easily modifiable solution that by design can be integrated with our third-party inspections scheduler and iGIS applications and capable of cross-platform interoperability with other county enterprise solutions (LGFS, CAMA, Official Records, ArcServer) to substantially enhance internal and external user customer service to meet current and future County LDM needs.

Objectives:

- Internal users to have the ability to initiate, review/process, reject/approve, and track applications, plans, subdivisions, permits, investigations, create work tasks, receive notifications, approve permits, schedule and perform field inspections, and receive results.
- Citizens/business users to have the ability to initiate in-person or via an interactive and easy to use dashboard/customer-service portal, predevelopment letter (zoning verification) requests, rezoning and special use applications, comprehensive plan amendments, Ag and Forestall applications, conservation easement requests, preliminary and final subdivisions, business signage applications, home occupation business applications, code compliance/enforcement investigation requests, building and trades permit applications, E & S and storm water permit applications.
- Citizens, business users, and internal staff to have the ability to query and view past land development activities and permits and view, query, and track current and proposed land development activities and permits.

- Citizens and business users to have the ability to submit electronically, development site plans, preliminary and final subdivision plats, rezoning and special use permit plans, building and trade plans, erosion and sediment control (E & S) and storm water management plans.
- Internal staff to have the ability to electronically review and make comments/request revisions/resubmission of site plans, preliminary and final subdivision plats, rezoning and special use permit plans, building and trade plans, erosion and sediment control (E & S) and storm water management plans.
- Automated communication and notifications to internal users as well as citizens and business users for application processes and events (i.e. public meetings, work tasks, rejection/approvals, correspondences, emails, etc.).
- Mobile handheld device (smart phones, tablets, etc.) wireless connectivity and usage (query/view/editing/attach) for code investigations, building/trades inspections, verification of work, and status of applications, permits, and code enforcement actions.
- Enhance inspection scheduling based on location, route travel time; work load, inspector skills set, and work to be accomplished.
- Fully integrated GIS viewer for query, reporting, and printing without requiring expensive third-party licenses.
- User friendly creation and modification for standard reports such as permits and summaries.
- Ad Hoc reporting system using a documented data dictionary and reporting wizard for operational, managerial, and executive reporting.
- Standard and user-defined tailored report printing.
- Modular, flexible, scalable, and configurable solution to meet current and future LDM business use processes, needs, and initiatives.
- Near seamless cross-platform interoperability to other County enterprise applications for land ownership, real estate property records, official records, GIS, and payments.
- Application, project, and permit workflow management functionality that can automate and adapt to current and revised business processes and initiatives.
- Easily customizable to implement business driven enhancements and changes.
- Configurable for local hosting or software-as-a-service cloud hosting to improve citizen and business user access and communication.
- Electronic payment processing to meet Payment Card Industry (PCI) requirements for payments.
- IT enhanced security standards for electronic information.

6.1 Replacement Enterprise LDM Solution Enhanced Functions

The County's desired replacement LDM solution would expand functionality to better serve the internal staff and private citizens and business users. In addition to the planning, zoning, and subdivisions, code compliance and enforcement along with permitting and inspections, E &S, and GIS viewing, other desired core functions are:

- Surety bond tacking for projects and permits
- Proffer tracking for rezoning and conditions tracking for special use permits
- Home business occupation registration and tracking
- Storm water permitting and compliance
- Electronic plans review and commenting
- Enhanced Workflow Management
- Public facing dashboard for LDM activities
- Customer-service portal for citizen and business users to initiate and track LDM applications and permits.
- Mobile phone/tablet seamless connectivity

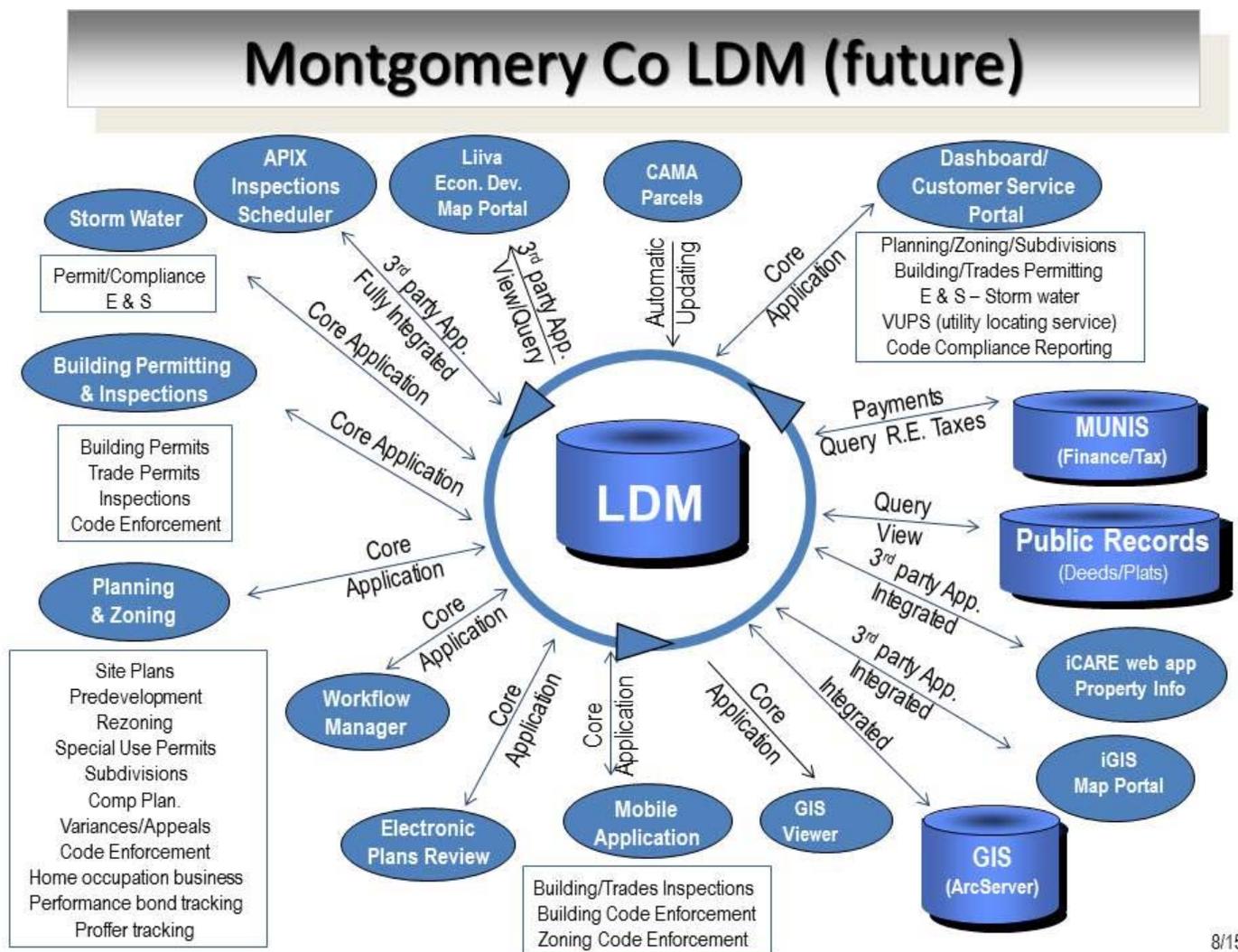
- Ad-Hoc Reporting
- Third-party application integration
- Key county enterprise application cross-platform interoperability

6.2 Conversion of LDM Solution Records

When the current LDM solution was implemented in 2007, rezoning, special use permits, subdivisions, building and trades permits, E & S permits, and code enforcement cases from many different databases and spreadsheets were imported. The County desires to have our enterprise LDM records converted for use in the replacement LDM solution.

6.3 Replacement Enterprise LDM Solution Environment Descriptive Diagram (future state)

Below is a descriptive diagram of the replacement Montgomery County LDM solution. The diagram is meant to show major functions and not absolute uses.



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6.4 Surety Bond Tracking for Land Development Projects and Permits

For land development projects and permits, project bonds ensure that if projects are not completed, monies will be available to complete the project and may cover a warranty period. Bond tracking would include bond number, type, description, payment type, amount, bond paid, work bonded, amount reduced, date reduced, expiration date, released-yes/no, and a released date. A comments field should also be included. Bond tracking should also include an automated report/targeted email to the appropriate internal staff, the bond issuer, and the bond owner for bonds expiring in 30, 60, and 90 days.

6.5 Proffer Tracking for Rezoning and Conditions Tracking for Special User Permits

Proffers are a unique land use tool in Virginia, somewhat similar to impact fees in other states. A proffer is a voluntary offer by a landowner during the rezoning process to perform an act or donate money, a product, or services to offset the impacts of the proposed change in zoning. Proffers stay with the land in perpetuity or until the property is specifically rezoned once again, however, proffers on a parcel remain if the subsequent rezoning is part of the comprehensive implementation of a new or substantially revised zoning ordinance and associated mapping.

Proffers must be tracked. Virginia Code § 15.2-2303.2(A) requires that each locality accepting a cash proffer on or after July 1, 2005, pursuant to § 15.2, 15-2298, 15.2-2303, or 15.2-2303.1 must, within 12 years after receiving full payment, begin construction or other improvements for which the cash payment was proffered or forward the amount to the Commonwealth Transportation Board.

It is our desire that the replacement LDM solution have a nonmonetary and monetary proffer tracking index for each approved rezoning to include:

- Type of voluntary proffer (service, product, or cash)
- Date voluntary proffer was accepted
- Linked to applicable approved rezoning application
- Linked to Capital Improvements Program (CIP) with CIP site inspection reporting during life of project
- Monthly notification to internal staff and respective agencies of proffer status
- Monthly and yearly monetary cash contributions reporting
- Integration with our financial system for payments and tracking

6.6 Home Business Occupation Tracking

The zoning administrator is required to review home occupation and home business applications to determine whether they will be allowed by right or special use permit. Staff would like to have an automated review and tracking system for these uses. Review would include name, address, email address, phone number, parcel id no., tax map no., zoning designation, description of business (in detail), proposed business name, square footage of the dwelling unit, square footage used for home occupation, total number of employees, number of employees living in the dwelling (including yourself), sketch of the residential floor plan with dimensions, location and size of the proposed business in the home, details of any sign to be installed, a certification statement to be signed by the applicant. A comments field and fee information should be included. Home occupation/home business tracking should include an automated report identifying all application information whether approved or denied, and generating a permit for approved applications.

We believe the Home Occupation Business application process should be part of the LDM dashboard/ customer service portal.

Specifically:

- Verify the zoning district based of the site address. If the zoning district does not allow a home occupation business a message will be displayed with option to contact the Zoning Administrator either by email or telephone.
- If the zoning district permits a home occupation business, an online application will open and prompt the citizen to enter the required information as above.
- After the information is entered and saved, the Zoning Administrator will receive a task via the LDM to review and approve or disapprove the application.

- The citizen will receive an automated letter from the Zoning Administrator advising that their application is approved or disapproved.

6.7 Subdivisions

Currently, the subdivision processes to verify recordation of approved plats and to submit plats to other agencies for review are not automated. With the new LDM it would be beneficial to enhance those process by providing connectivity with Clerk Office land records to verify and transfer recordation data (required to be completed within 6 months of approval), incorporating Public Service Authority's review/approval into the process, submitting plats and accompanying information to the Health Department and VDOT for review (possibly through the dashboard/portal).

6.8 Comprehensive Plan Amendments

Amendments to the Comprehensive Plan may or may not be tied to specific parcels. Often they may represent text changes based on a change in conditions or State Code requirements. The replacement LDM should exhibit a way to track these changes whether tied to parcels or more comprehensive in nature. This would create a database of changes allowing staff to easily research and update the Comprehensive Plan.

6.9 Building and Trades Permit and Inspections Interactive Customer Service Portal

One of the important LDM enhancements we desire is an interactive customer service portal whereby our citizens and business interests can ask questions and obtain answers.

For building/trades permitting and inspections a customer service portal would have an intelligent assistant capability like Apple Siri™, Microsoft Cortana™, and Google Now™. Questions could be asked and using an LDM knowledge database, the portal would respond with voice answers or YouTube™ tutorials prepared by our building and inspections staff. For specific building code questions, the portal could respond by directing the requestor to the Virginia Building and Code Officials Association (VBOCA) Codes section website. The ability to take written website text and "read back" as voice would be very desirable.

Building permitting and inspections would like a customer service portal to "learn" with each question, so when the same or similar question is asked again, a response would be automatically available from the knowledge database.

A building/trades permitting and inspections customer service portal could also provide a means to obtain answers about a particular building or electrical, mechanical, or plumbing construction issue. The ability to automatically route those questions to a "preferred" inspector would be beneficial.

6.10 Storm Water Permitting and Compliance

The new LDM should be capable of providing Stormwater Management reporting and record keeping functions. This would be in addition to the overall project records for plan review, bonding, and storing of associated project documents for construction approval. The information would include but not be limited to the following:

- Information on each permanent stormwater management facility completed, or already existing, to include type of stormwater management facility, geographic coordinates, address, responsible party, acres treated, the surface waters or karst features into which the stormwater management facility will discharge, DEQ registration number, project name, relevant dates, etc.
- Information on type of enforcement actions taken including stop work orders, injunctions, and civil penalties with descriptions of violations and corrective action process
- Information and description of exceptions granted.

- Records for construction inspections and post-construction inspections including inspection frequency with automatic notification for both owner requirements and County requirements, construction record drawings with relevant details and access information.
- Records for any maintenance performed, or repairs made, to any stormwater management facility.
- Information for the Illicit Discharge Detection and Elimination Program including data for County outfalls in MS4 areas, geographic coordinates, drainage area, land use, precipitation records, measurements and observations, inspection dates and conditions, enforcement actions, prioritized schedules for screening, etc.
- Information on long-term stormwater facility maintenance agreements including parcel number, landowner, successors, assigns, homeowners association, deed instrument number, maintenance manuals, plats, etc.
- Information on properties that have performed unauthorized work for easy cross reference with future proposals.
- Future information may include data for a stormwater utility program.
- Future information may include specific requirements for drainage sheds identified as impaired.

The Stormwater Management Program should be integrated with the Erosion and Sediment Control Program. The data should be able to be mined for creation of custom reports and to auto populate permit documents and notifications. The data should be transferable to excel worksheet templates so that it can be uploaded to other systems such as the DEQ CGP system. Basic data for any stormwater management facility should be included as essential information on any inquiry about parcels, subdivisions, or developments that contain or have a connection to the facility.

6.11 Electronic Plan Review

County staff is required to review plans submitted as part of LDM planning and zoning activities, building and trades permitting, E & S permitting and storm water compliance and permitting. While many simple plans are efficiently reviewed when submitted as paper, complex multi-sheet site plans, major subdivisions, residential and non-residential building plans, erosion and sediment control (E&S) plans, development/site utility plans (PSA), and storm water plans could be more expeditiously reviewed if submitted in electronic form. The replacement LDM solution should allow plans and related attachments to be submitted by an applicant (i.e. developers, contractors, engineers and surveyors, citizens, etc.) via the customer-service portal. The electronic plans would then be routed to specific reviewers or a team of reviewers in one or multiple departments. Electronic plans submitted would be in a format (AutoCAD and GIS) conducive to efficient and timely review by staff. Other formats could be accepted, but would diminish the efficiency of an electronic plan review process. Reviewers would have the ability to annotate remarks and/or mark up the submitted electronic plans. When review is completed, a notice would be sent to the applicant notifying that the submitted plan was reviewed and marked up with comments or required no changes. The applicant would have the option to view the plans and comments online or download the plans. Staff would have a master digitally ID'd version of electronic copy of the plans with their reviews and comments. At each junction in the review process an entry would be made in the Workflow Manager to show status including, a reviewer's name, the number of review days for each plan and what future actions would be required from internal staff and the submitter.

6.12 Enhanced Workflow Management

An important part of our current enterprise LDM solution is its ability to help internal users manage assigned tasks and approvals for each LDM activity and permit via a workflow manager.

Currently, each assigned task includes pertinent information about the task, the date it was scheduled and completed, and who the task was assigned to. Often LDM activities and permits require different types of tasks. The task workflows used to perform these functions can be complicated, having numerous steps, involving different staff and multiple departments and outside agencies.

The current enterprise LDM solution workflow manager is also used to export LDM permit and code enforcement records for the mobile field data collection application.

The replacement enterprise LDM solution workflow manager would integrate with the public facing dashboard and customer-service portal to provide real-time information to any applicant (citizens and business users) or interested party. This function should fully integrate with the Electronic Plan Review described above.

6.13 Task Table Manager and Workflow Configuration

Our current LDM solution includes a task table function whereby a task can be associated with a staff member and department. The task table function simplifies modifying information. It is imperative that the replacement enterprise LDM solution have a similar task table function so that changes can be made easily and in a timely fashion without software programming. The task table function is a prime driver for the workflow manager and should be part of any replacement LDM solution.

While business rules and associated triggers are generally a programmatic function, having the ability to modify workflow configurations to implement changes is very desirable. Workflow configurations should be easily accessible and should not normally require programmatic configuration coding. The workflow configuration changes should be guided by business subject matter experts and performed by LDM system administrators.

6.14 Dashboard/Customer-service Portal

An important part of the desired replacement LDM solution is a nimble and easy to use public facing dashboard and customer-service portal. We envision that the dashboard and customer-service portal will be a “one-stop shop” for interactions between our citizens and business users and the County’s LDM solution.

Overall, we envision a dashboard and customer-service portal as a means to communicate static as well as interactive real-time data and information regarding specific land development activity and permits to all relevant and interested parties.

Dashboard/Customer-service portal desired functionality:

- Citizens and business users would use a dashboard to get information pertaining to County LDM processes, regulations, and to query, track and view all in-progress as well as completed LDM activities.
- While the dashboard would be directed primarily at citizens and business users; it should also be suitable for elected county officials and senior county management to easily obtain LDM activity information.
- Citizens and business users would use the dashboard (or customer-service portal) as a question/answer decision tree mechanism to determine how to apply for a specific LDM activity or permit. The process would start with general questions and from answers provided by the potential applicant, narrow to a specific LDM business process to use to initiate an application or permit. More experienced users would have the ability to go directly to the customer service portal start a specific LDM application or permit process.
- Citizens and business users would use the customer-service portal to initiate applications for rezoning, special use permits, comprehensive land use amendment changes, subdivisions, business sign permits, home occupation, code compliance reporting, building and trade permits, E & S permits, and storm water permits. Building and trade permit scheduling would use our custom APIX web application.
- Citizens and business users would use the customer-service portal to pay application and permit fees using the payment card industry (PCI) standard.

6.15 Third-Party Application Integration

As the County experienced a demand for expanded use of our current enterprise LDM solution, we conducted a process similar to a SWOT (strengths, weaknesses, opportunities, and threats) analysis with a consultant.

A smart phone, tablet, laptop, and desktop web application for contractors, tradesman, and owner/builders to request an inspection and receive results via the web and email was determined to be a significant opportunity. The web application would reduce telephone calls and in-person visits to the building and inspections office, thereby increasing staff efficiency. The inspections web application automates much of the public facing side of customer service with its ability for citizens and building and trades contractors to request inspections and receive acknowledgements via an email and web application. The requestor also receives via email and the web application the inspection result. The APIX inspections scheduler web application also employs an integrated GIS viewer. This is especially useful for a contractor or tradesman doing multiple jobs in a subdivision or along a street for easy visual identification of a specific inspection request.

The weakness and threat is that our current LDM solution lacks a capability to dynamically interact with any third-party application, specifically to allow data received from the third-party application to be automatically entered into the LDM solution due to its design.

The replacement LDM solution should provide the strength of near-seamless integration with third-party applications including those the County has implemented.

6.16 Key County Enterprise Application Interoperability

Near seamless cross-platform application interoperability is a key objective for the replacement enterprise LDM solution.

The county's LDM enterprise spans separate applications, Planning and GIS and Building and Inspections LDM solution, Real Estate Assessment's Computer Assisted Mass Appraisal (CAMA) application, and the Clerk of Courts Official Records application. Each related solution was selected for its ability to accomplish business use objectives but to a great extent lack full coherent application interoperability unless it is specifically offered or owned by that vendor.

Although our current LDM solution is GIS centric, due to its design and age it is not natively capable of consuming ESRI ArcServer published web services or connecting to the enterprise GIS database. Therefore interoperability is not capable.

Replacing our enterprise LDM with a solution that enables semantic and coherent interoperability by automatically interpreting information from the other enterprise LDM applications as seamlessly as possible is imperative. We wish to avoid post facto interoperability.

Appendix A – County Information Technology Standards

If the replacement LDM solution is locally hosted, Montgomery County Information Technology Division will provide computing, infrastructure, and support services for the replacement LDM solution.

The County hosts applications in a completely virtualized environment using VMWare vSphere 5.5 Enterprise Plus on Windows 2012 servers. The County provides a high availability environment by clustering three VM hosts with 384 GB memory and 20 core processors each at two data centers. VMWare's Site Recovery Manager (SRM) is used for disaster recovery if a site should become unavailable. Storage is provided by two 30 TB Nimble SANs that are replicated between sites with snapshots taken every hour. Archival is available via Crossroads' Strong Box with a hybrid disk (48 TB) and tape storage (up to 250 TB).

SQL Server 2012 is used as the standard database management system. A shared virtualized database environment is available as well as isolated application database environments.

The County supports hybrid solutions (local hosting and cloud) via a redundant 2x10 GB fiber network with 2x25 MB private fiber internet connection with a 2x50 MB microwave public internet connection (also backup to private internet). A DMZ is available using Microsoft's IIS, SonicWall 4600 firewalls, and virtualized Windows 2012 servers.

The County's application development environment has standardized on Microsoft's C#.NET 4.5 environment using HTML5 and CSS3 for web development. The County's software direction is to support Service-Oriented Architectures (SOA) and prefers modular software development using web parts and web services. Responsive design techniques using HTML5 and CSS3 are preferred to support mobile applications. Team Foundation Server 2013 and SharePoint 2013 are used for software development collaboration. The County's e-mail environment is Microsoft Exchange 2010 (migrating to 2013 by the end of the year).