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Acquisition of Right of Way for highway construction

Imad Aleithawe

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ACQUISITION OF RIGHT OF WAY FOR HIGHWAY CONSTRUCTION

By

Imad Aleithawe

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of philosophy
in Civil Engineering
in the Department of Civil and Environmental Engineering

Mississippi State, Mississippi

May 2010
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ACQUISITION OF RIGHT OF WAY FOR HIGHWAY CONSTRUCTION

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A key element in moving highway construction projects forward is the ability to acquire the Right of Way (ROW) in a timely manner. Delay in the acquisition process due to multitude of causes will usually lead to major construction phase delays. Identifying the delay factors allows for better time management of the process. A detailed review of the acquisition process at the Mississippi Department of Transportation (MDOT) is used as an example. Reviews of the process in neighboring states are also presented in order to determine other current practices and their likely impact on the acquisition duration. Descriptive and multivariable regression analysis of 35 randomly selected highway projects identified three variables “condemnation”, “number of parcels” and “revisions of plans” for the increase of acquisition duration. Using statistica7 software with analysis of variance, and regression a prediction model is developed and tested for the prediction of acquisition duration. These findings with new processes (forms) and an enhanced flow chart using current
information technology procedures are introduced to reduce condemnation cases and to enhance the acquisition process.

Key words: Right of Way, ROW Acquisition, ROW duration
DEDICATION

This was dedicated to my family here and abroad.
ACKNOWLEDGEMENTS

I will begin by expressing my appreciation to my committee members. First, to my chair and advisor Dr. Ralph Sinno, your deep interest, flexibility and positive attitude are traits that have pushed me to do my best. Also, you have provided me with the confidence in my academic and leadership abilities to consider possibilities that exist to make a major impact in the profession. Mississippi State University is very fortunate to have acquired your services. Thank you to My Stat Professor Dr. William McAnally for your willingness to read the dissertation draft and the offering of suggestions that went above and beyond your responsibilities to make things easy to understand. Thank you to Dr. Li Zhan and Dr. Allen Greenwood for their willingness to serve as member of my committee, your support and help is very much appreciated. To all ROW managers, senior staff Ramon Tate, Barney Lane, Charles Anderson, Frank Lovell, as well as other field agents, thanks for the support and input through meetings, multiple phone calls and e-mails, your deep desire to help to find solution to enhance the ROW acquisition process is much admired and appreciated. Also, I appreciate the administrators of the ROW division for their flexibility in allowing me the opportunity to use ROW data. Additionally, to consultants and surrounding states, Louisiana, Tennessee, Georgia and
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CHAPTER I
INTRODUCTION

1.1 General

Acquiring the Right of Way (ROW) for highway projects at a Fair Market Value (FMV) and a reasonable cost is an important aspect of developing the construction cost of highway projects. The ability to purchase the ROW in a timely manner is the primary key to enabling a highway construction project to move forward. The ROW acquisition process is not only an economic issue that needs to be executed in a timely manner, but it is also a socially sensitive and personal issue in most cases. It deals with the public and private property ownership.

All aspects of the acquisition process in any state, where federal aid is usually involved, are subject to federal requirements. The Federal Real Property Acquisition Policies Act of 1970 (Uniform Act) serves an important public purpose by providing protection to affected owners and tenants. Compliance with this Uniform Act is always required for the acquisition relocation assistance of ROW. These requirements can at times impede the construction of a highway project pending the ability to agree on the purchase of the ROW necessary for the transportation corridor. ROW administrators and staff face continuous challenges to provide good, honest services to land owners. They are expected to address
specific public concerns such as anticipated fair market values, tax payer costs, environmental impacts on wetlands, hazardous sites and other site considerations related to the historical backgrounds, and its values.

There are two major reasons, among many others, for the interest in understanding the acquisition process and the nature of the economic impacts on transportation projects. One is to guide the decision making to maximize benefits of public investments. The other is to ensure that projects are appropriately designed with recognition of both the positive and negative economic impacts. The positive economic impact would be in developing new business opportunities, relieving traffic congestion and controlling the overall project cost. The negative economic impacts would be in creating mistrust in the opinions of the property owners, extending the completion date of projects beyond their target, and over run of the overall project cost.

This research tries to define the delay factors needed to be considered in a classical and common land acquisition process. This study seeks to develop a model to find the factors for reducing the duration and convert the model into actions and tactics that need to be taken to enhance the acquisition process. A mathematical model that predicts the acquisition duration for planning purposes is presented. Other factors such as the FMV process and its transparency in building trust and achieve fairness among all parties are also addressed.
1.2 Definition of the Problem

Currently, there is no direct answer to the question of the acquisition duration and how long the process will take. While research has reviewed strategies for acquisition, no previous research into the factors that impact this process has been done or published in the literature. Defining the factors that impede the acquisition process needs to be explored and researched in order to address the time delay question.

In all states the department of transportation is responsible for the purchase of the ROW for highway projects. The acquisition section of the ROW division of the Mississippi Department of Transportation (MDOT) is used as in this research an example.

The ROW division at MDOT is in charge of completing the process of acquiring needed parcels of land to develop planned transportation projects. This process is part of the overall management and coordination process for property acquisition. It includes local public agencies (LPA) such as county and city officials, the private business sector, private contracted consultants, the Federal Highway Administration (FHWA) as well as MDOT ROW agents and administrators. With these varied stakeholders, defining the acquisition delay factors and causes early is needed to allow for a better acquisition management process and the potential decrease in cost.

Critical functions in the appraisal and acquiring process includes collecting and gathering historical sales data for market analysis. In non-disclosure status states, such as Mississippi, a lack of transparency occurs when sales information
is not publicly published or accessible. Determining the FMV when comparable sales data are not a part of the public record, lack of transparency, makes the process questionable and challenging.

This research uses acquisition duration data based on actually completed projects to develop the prediction model for the total duration.

1.3 Objectives of the Research

This research reviewed randomly selected samples of completed ROW projects for the past five years to determine the factors that impacted the acquisition process that could contribute to any acquisition delays. Written permission was obtained from the ROW administrator to use such existing data. Comprehensive data from the ROW division of MDOT was used as well as information from other neighboring states for review and comparison of the findings. The data was evaluated to define the best ROW acquisition practices and to reduce the total acquisition duration. The focus was primarily on the current acquisition process of MDOT and successful practices of neighboring states.

The ongoing acquisition process of the ROW division of MDOT is reviewed and presented first. This is done in order to gain knowledge for recommending actions that are found to be needed to improve the ROW acquisition process.
The specific objectives of this research are as follows:

1. To review current acquisition practices to arrive at an offer to the owner to acquire his property for the ROW of a planned highway project.

2. To determine best practices that reduces acquisition duration.

3. To develop a mathematical model to predict acquisition duration.

4. To review other states and consultants ROW acquisition practices that is found to impact the duration.

5. To recommend actions that are found to reduce the acquisition duration from the initial planning stages to completed acquisition.

6. To recommend actions that build trust and communication among all parties involved regarding fair market value procedures for ROW acquisition.

1.4 Definition of Terms

Common terms that are often used in the ROW acquisition process are defined next. These terms are selected in order to establish the ground work for the follow-up discussion. These terms might have different meanings when used in different settings, but the following are the definitions applicable to this research:

- **Financial Management System (FMS) / Project No.:** A unique number that is assigned to the transportation construction project throughout the life of the project.

- **Parcel(s):** A piece of land that the state agency needs to acquire for a public project. Each parcel is assigned a unique FMS project number. For
example, MDOT uses 000-00-0-W that will be the same through the life of the project. The 000 represents the parcel number, the 00 represent the number of revisions to the parcels, the 0 represents the addition of new instrument due to the name change or other factors and the letter represents the type of deed.

- **Revision cases:** The number of changes, such as highway design change, or acreage and property owner name change, that each parcel or project gets during the acquisition process time of the project.

- **Eminent Domain (ED):** The power where the federal or state government takes private property for public projects when the property owner refuses to sign the deed despite offering what consider to be just compensations.

- **Condemnation cases:** The process by which parcels are acquired through legal proceedings for public projects under the power of Eminent Domain (ED).

- **Right of Way (ROW) Division:** The administrative office that supports the ROW agents or contracted private acquisition consultants and is in charge of discussions with the property owners in the acquisition process.

- **Administrative Adjustment Value (AAV):** An extra monetary value that can be applied or awarded to the property owner when it is justified by the acquisition officer.

- **Land Value (LV):** The property market value of the land only as determined by the appraisal agent.
- **Fair Market Value (FMV):** Process that determines the just compensation of the value derived from market sales that have sold in the area of the project or parcel.

- **Damage Value (DV):** The difference between the value of the whole property before the taking and the value of the remainder after the taking. This can include fences, loss of access to the remainder of property, gates, and parking lots, among others.

- **Acquisition Duration (Max):** The time period in days (condemnations cases included) it takes to acquire a parcel from the start of the negotiation offer to the time of the deed possession.

- **Acquisition Duration (Typical):** The time period in days that it takes to acquire a parcel from the start of the negotiation to the time of the deed possession through negotiation process.

- **Rural Location:** Represents parcels in each project that fall outside the city limits and the immediate surroundings.

- **Urban Location:** Represents parcels in each project that fall inside the city limit and the immediate surroundings.

- **Right of Way Agents:** Refers to parcels that have been acquired by compensations and fair market value determined by in-house DOT staff agents.

- **Consultant:** Refers to parcels that have been acquired by compensations and fair market value determined by private consultant service agents contracted by DOT.
- **Deeds Type:** The document that is signed and deeded to DOT after just compensations. There are usually several types of deeds used in the ROW acquisition process:
  - Warranty deed (W), a deed used in many states to convey fee title to real property.
  - Quit claim deed (Q), a deed where the grantor disclaims any interest such as title, claim, if any that he may have in a piece of property.
  - Temporary easement deed (T), a deed where a right is granted by property owner for a specific reason and limited period of time. At the end of the specified time period all right to that use ceases.
  - Permanent easement deed (E), a deed where a right is granted by one party to use the property of another which is indefinite or perpetual in its duration.
  - Access rights deed (G), a deed with right to ingress and egress to and from one’s property.

- **Quick Take:** Right of entry procedure that the State Code authorizes to acquire property for transportation projects under the power of ED after unsuccessful negotiation to purchase said property.

- **Letting date:** The time when ROW acquisition is completed and the project is ready for the construction phase to begin.

- **Parcel Tracking System (PTS):** Database system that maintains data related to ROW acquisition and used to track all acquisition activities.
Non-disclosure status: Where property transaction sale prices are not available to the public.

1.5 Literature Review

An extensive literature review of published materials was conducted to help identify and understand the ROW acquisition process. The purpose for this literature review was to identify background information and published material related to the ROW procedures and process in general. The following is a summary of the findings in this regard.

Research efforts that have been done by the Federal Highway Administrator or other states in the past addressed the ROW acquisition duration and cost. However, accelerating the ROW acquisition delivery process still remains a concern to ROW administrators and managers at department of transportation’s nationwide due to the difficulty of identifying all circumstances concerned (1). The goal has always been for public agencies to provide good and honest services to its public (2). Transportation projects in the development stage are still struggling with a good method or procedure for predicting the ROW acquisition duration. ROW managers and administrators are constantly faced with the ongoing challenge to answer the hard questions of how long will it take to acquire the ROW for a project. There is no simple direct answer due to many factors associated with this question.
1.5.1 Innovative practices to reduce ROW delivery by T. Walter (1)

T. Walter conducted research in 2000 that was intended to find innovative practices to reduce the delivery time for acquiring ROW in the project development. This research addressed the ROW delivery, mitigation activities, and reported on the successful strategies that have been used in the delivery process. A survey questionnaire was used in that research. Thirty six DOT ROW administrators and managers in all 50 states responded to the detailed survey. Only five states provided detailed information about successfully implemented approaches to enhance the ROW delivery process.

Several topics were discussed by the DOT agencies that responded to the survey that included; the role of ROW in the project development and planning, barriers to effective ROW delivery, reduced ROW duration using innovative project management measures and practices.

T. Walter survey identified several factors: Early involvement in project development, field personnel empowerment, project scheduling by ROW staff, and effective communications between all parties involved in the design process and performing parallel ROW activities without waiting on the final design. He noted that the respondent to the survey indicated that the early ROW participation in the project development helped expedite the delivery process. The ROW division was reported to be a component of the project development, but this participation in the project development varied from state to state. The survey showed that 27 of the 36 (75%) state DOT respondents’ were involved in the project development element from its inception in large and small projects.
alike. Others, 12 out of 36 (33%), were involved with limited but significant participation. Five of the 36 (14%) participated on special request and for a limited purpose.

The survey reported that there was a need to have project scheduling that was realistic and could be adjusted for major delay cases and not based on external elements, such as “rule of thumb”, politics, and funding. Project scheduling that involved ROW early in the development process provided lead time and insured adequate use of resources to yield an effective job. The research showed clearly the importance of approaches that were based on enhanced communications and good coordination among all parties in the project development. Other states, T Walter noted, have enhanced the level of communications between all parties involved with specific activities such as planning, design, and scheduling during the ROW phase in the project development process. Plan revisions and redesign of ROW after the start of the appraisal and acquisition processes often frustrated the ROW managers and field agents.

T. Walter survey identified a range of barriers to an effective right of way delivery process: Late design, revisions, and plan changes constituted the major barriers that most affected the delivery process among all 36 respondents (100%). Inadequate staffing, environmental impediments and project scheduling were additional issues right of way administrators and managers thought impeded the delivery process (25%). Relocation assistance, court cases, ineffective use of technology and consultant problems were all below 13% among the survey
respondents. Title problems including lien releases and partial releases were below 12%. Fifty percent of respondents indicated delay was due to some functional ROW elements that hindered the speedy delivery of the ROW, such as appraisal delay (22%), and relocations assistant obstacles (17%). Almost two third of the 36 survey respondents (58%) indicated some issue that was outside of the state transportation agency management control, such as the law and public policy.

The T. Walter survey listed various innovative procedures implemented to enhance the effectiveness and quality as well as reduce the ROW acquisition duration. The survey reported training was ranked the best effective practice. The survey showed that 78% of respondents listed training as very useful or somewhat useful to speed the ROW delivery. According to the survey, the training of the ROW agents was provided by the International Right of Way Association (IRWA), The Federal Highway Administration (FHWA) National Institute, and The Appraisal Institute and American Association of State Highway and Transportation Officials (AASHTO) in order to maintain their license status. It was also suggested that there was a need for cross training of ROW staff in more than one ROW function. Nontraditional subjects such as information technology systems and project development were suggested to be included. Additionally, often insufficiently trained young agents with limited experience would impede the ROW delivery process according to the T. Walter report.

Also, the use of administrative settlement was addressed in this study as an effective way in reducing ROW acquisition duration. Twenty eight of the 35
agencies that responded to the administrative settlement ranked it as a very useful tool to expedite the ROW acquisition. This practice was reported to have been used widely among agencies for its effectiveness in expediting ROW delivery process. T. Walter noted, the support of such practice by the FHWA for the cost and time saving as a justification for the use of this practice.

The report listed only 5 states that have implemented innovative project management models. These were; Florida, California, Iowa, Utah and Washington. Each one of these states used their own effective methods and techniques reported to improve the ROW acquisition duration process.

Project management teams with the use of flexible acquisition methods were used by Florida and Iowa, have contributed to the reduction of acquisition duration, and reduction in overall cost. Additionally they have enhanced the relationship and restored trust between agencies, staff agents and the public in many state transportation agencies. This method used as an effective tool to oversee and examine all of the acquisition processes and to communicate findings or suggestions between staff and managers. In 1998, Washington State Transportation Agency established Real Estate Acquisition Team (REACT) to oversee the acquisition process’ effectiveness and made recommendations when needed. Within nine months of the program establishment, 18 recommendations in plan, funding, relocation, appraisal, appraisal review, negotiations and property management were adopted and approved. Empowering field agents to make decisions will enhance the acquisition process by advancing the settlement with the property owners. This reduced managerial control and installed confidence
and accountability in the agents’ decision making. According to California DOT, empowering staff improved customer service and reduced ROW acquisition duration.

T. Walter survey also described the laws, regulations and policy influence on the ROW acquisition delivery process and how to define the boundaries and limits of change to develop good strategies for faster delivery. Each state has its own law and some provisions that are more restrictive than other states. On all federally funded projects, the Uniform Act is the primary federal law that controls the ROW process and practices. Its procedures seek to “expedite the acquisition of real property, avoid litigation, and promote public confidence in Federal land acquisition practices (2)". It requires the acquiring agency to offer the property owner “just compensation”, based on an independent appraisal of fair market value. T. Walter also listed other federal laws that affect the ROW delivery process such as the Comprehensive Environmental Repose, Compensation, and Liability Act of 1980 (amended 1986) (CERCLA) which is often referred to as the “superfund law”, the Resource Conservation and Recovery Act of 1976 (RCRA) that deals with hazardous waste, the Clean Air Act (CAA) that added the asbestos abatement to the hazardous list may delay acquisition.

1.5.2 Guidelines developed by TEA-21, FHWA and ASHTTO (3)

Another recently published paper that addressed the ROW acquisition process, covered guidelines developed by AASHTO in 2004, “Advocated Guideline and Best Practices to Assure Timely Procurement, Clearance of Right of Way and Adjustment Utilities” (3).
The Transportation Equity Act of 1998 (TEA-21) added greater flexibility to state and transportation agencies in acquiring and managing property for transportation projects. State laws and regulations provisions may help some of the transportation agencies to influence the acquisition delivery process, such as early acquisitions and corridor preservation.

Early acquisition of property, recognized by the FHWA, allows transportation agencies to acquire ROW property before the start of the design process. In 1988 the FHWA encouraged the design and use of this concept (11). Two years later, AASHTO identified several benefits and recommended the use of this practice in its 1990 report (12).

The review of this paper can be summarized into 3 categories.

1. Project Management: Some states, such as, Florida have developed multifunctional teams among their districts that are taking the lead from the initial stage of the project development through the ROW acquisition process. All senior staff are active in providing their knowledge and expertise of social and economic impacts to the new transportation projects, to help make better transportation decisions. Other state agencies believe that the most effective factor in the development of a transportation solution is to identify the economic cost, complexity of projects and environmental impact on the transportation projects. The report also listed other countries acquisition practices such as Sweden, Denmark, UK and Germany involving the property owners in advance to discuss issues and impacts once the agency sets the final route. Overall European processes have a better outcome for the property owners than in the
United States (13). In the Netherlands, for better communication and coordination among other disciplines, the ROW acquisition and utility adjustment are treated as critical elements by project management and are integrated into the project development process according to the report.

2. Appraisal and Appraisal Review: The report noted that experienced and knowledgeable staffs contribute tremendously to the acquisition process enhancement. European countries’ research shows the use of one agent to serve as an appraisal and negotiator is best. The use of effective contracting services for acquisition consultants was encouraged with effective contracting procedures by the AASHTO Best Practices guidelines. The use of a contracted service as recommended by the best practices was utilized in two ways, use of a master list of qualified bidders, and the use of the low bid process. Texas DOT uses the ROW acquisition provider services that consider the qualifications of the bidders rather than low bids process. This showed a reduction of about 33% of the ROW acquisition duration (4).

3. Acquisition: Contact with property owners by the agency staff before the completion of the project design was listed as important to successful acquisition. This early contact allowed staff to have a better understanding of the way the property is used. Some European countries use the early acquisition tools method, issuing a construction permit while negotiations are ongoing to reduce duration and cost. FHWA encourage the use of the risk management concept used by different countries for right of entry. Netherland, Germany and Norway use an interesting land consolidation concept that allows fragmented parcels to
be distributed among property owners to have parcels of the same value but without a road going through them. Norway initiated this process with one owner request, but Germany and the Netherlands need the majority of owner’s agreements to start the process.

1.5.3 Acquisition Tips and Strategies by Larry Stevens (5)

This article was published in the International Right of Way Magazine in 2002. The paper addressed some of the basics elements that prepare the new inexperience acquisition agents to meet the negotiating challenges with preparation and knowledge to acquire property for construction projects. In order for the agents to establish credibility in addressing the property owners’ questions and concerns they need to have thorough knowledge of the property, the project and the surrounding area. One of the acquisition agents’ tasks is to read the appraisal report with an eye toward the analysis of the market value, the comparable sales data and how they support the appraiser conclusion. The agent need to be aware of information from the appraisal report such as cost to cure damages, leases or tenants owning realty undocumented interests. The acquisition agent need to review the appraiser’s diary and if the appraiser had any follow up discussions regarding the property.

The article pointed out the importance of up to date title work on the property to be acquired. Emphasis on the importance of the agents’ acquaintance with design aspects of the project is also stressed. Understanding of the total and partial takes and the impact of the traffic on the property owner are other issues of which the agent needs to be knowledgeable. Historical data,
old deeds and titles, track maps and easements are useful to the agents according to the paper. Field inspection by the agents to the project to gain knowledge of any recent neighborhood sale activities is addressed in the article. The article also noted that the owner’s first impressions of the agent are important. Appearance, politeness, professionalism and the need to use the word purchase not “take” during meetings improves the owner’s first impressions. Listening to the owner and learning about the owner’s attitude, anger and negative thoughts about the project will help with negotiations. Prior to effective negotiations, information needs to be established about the owner by touring the property with the owner and observing the owners’ body language. The article concluded that the agents should never forget whom they work for and understand that the owner is a taxpayer as well and to look for best possible outcome for both the owner and the agency.

1.5.4 Right of way acquisition and property condemnation: a comparison of US state law by Shadi Hakimi (6)

This paper examined key ROW laws in all states with emphasis on the real estate’s acquisition rules. The Author completed a survey of the ROW acquisition literature to identify three legal matters impacting the acquisition process: 1) key laws that address ROW state law amendments and that significantly influenced the acquisition process, 2) federal law when acquiring for federal projects and 3) best practices and strategies during the acquisition process. The author noted that in order to improve the U.S. ROW acquisition process consideration of each state’s environmental, social, economic and
political characteristics should be given. He also noted the need for law changes to promote transparency to build trust between property owners and the government. This would minimize cost by expediting the acquisition process.

1. **ROW state law:** The power of government to acquire property and restrict property rights is regulated by the US as well as almost all states constitution. Two legal actions can result when property is taken; 1) condemnation proceedings when the government agrees to pay the property owner “just compensation” and 2) the government shows an interest in property but denies its intentions to take it. The author also noted that each state uses its own law flexibility on compensable items, and when detailed state compensable laws are properly applied by the ROW appraiser condemnation case rates are reduced.

2. **Economic remnant and the Uniform act:** The author believes that when there is an economic remnant involved due to partial take by the acquisition agency, the agency must offer to purchase it from the property owner. States that allow this process through negotiations tend to enhance the acquisition process. All projects are subject to this law when federal aid is involved.

3. **Best practices:** The author stressed that the appraisal process is subjective by nature, although it is well structured and professional. Although the acquisition agents' flexibility might be limited to the appraisal report they receive, agents should listen to the property owners concerns and try to find a solution to solve the issue that prevents the agreement. However, other acquisition strategies should be allowed when negotiations fail. The early acquisition option is one of the strategies to be used to reduce the condemnation cases.
Another practice stated by the author is the administrative settlement approval. It is the amount that accessed the approved amount offered for “just compensation”. According to the paper, it makes no sense to send a case to court when a small adjustment will provide a solution. Mediation and arbitration methods are also good strategy options to reduce condemnation rates. Empathy is another way of helping successful acquisition process by smoothing the path for effective communication that ends in agreement with the owners.

The author concluded that ROW divisions should apply good techniques and strategies to enhance the acquisition process, and agencies should seek law previsions that can significantly enhance the acquisition process.

1.5.5 Effective Acquisition under the Updated Uniform Act Regulation by Mamie Smith in 2005 (7)

This paper described the important changes, in the revised regulations, for acquiring agencies and the public and that the main changes to the acquisition process are in the valuation process.

1. Wavier valuation: An appraisal for every planned acquisition is required by the Uniform Real estate Act (URA), but this can be waived for low market value property, less than $10,000 and the acquisition is uncomplicated. The limit was changed under the new rules from $2500 to $10,000 and can be increased with a conditioned option. Most of the transportation departments use the wavier valuation process and some experimented with $25000 higher limit. This process will save time and staff recourses for the agency as well as for the property owner, by assuring a faster valuation. Waivers are not appraisals therefore any
agent can perform this task. However, there should be a process in place to approve such an amount as just compensation. Also stated, that the new changes should not replace the standards established by the Uniform Standards of Professional Appraisal Practice (USPAP).

2. Appraisal Review responsibilities and scope of work: The paper described the need to place expectations on the agencies to ensure the qualifications of the review staff that match the appraisal assignment complexity. The expectations are to define the review appraiser responsibilities, scope of work and appraisal problems definition and requirements and to differentiate between URA and USPAP requirements. The appraiser and the review appraiser must be qualified by the agency criteria before starting the assignment. The reviewer must determine each report as indicator of FMV, accept or reject the appraisal report if not complying with the standard and requirements. During the review process, the reviewer should communicate with the appraisal to discuss the report conclusion and ready to prepare an independent valuation that meet the URA.

3. Conflict of interest increase: The valuation amount was increased to $10,000 from the previous $2500 limit. The overall objective is to allow transportation agencies to operate as expeditiously as possible and reduce the risk of fraud. The new law prevision assures that the valuation process is not improperly influenced. The agent performing waiver valuation would need to certify having no interest in the land being appraised. Agents who perform valuation need not to be supervised by those who in contact with property owner to remove any possible influence of the valuation process. This requirement may compel the
acquisition agency to adopt changes. If a hardship placed on the agency result
from this requirement, a waiver of this requirement may be available.

The author concluded that most professionals who worked with the URA
regarding the program as excellent tools to ensure protection of business and the
property owners affected by the acquisition of private land for public use. It also
ensures that tax payers’ money is not wasted. The changes are intended to
make a good program even better.
2.1 Background of ROW Acquisition

The DOT in any state is entrusted with providing a safe, intermodal transportation network that is planned, designed, constructed and maintained in an effective cost-efficient and environmentally sensitive manner. The mission is to improve accessibility and mobility for a safe transportation system, maintain and preserve the system, with environmental sensitivity, support economic development, support effective partnerships to enhance the intermodal system and provide funding (8).

The ROW Division of the DOT is one of many other divisions in these agencies. Everything that is acquired for transportation projects usually has to come through the central administrative offices of the ROW division. For example, the ROW total budget at MDOT including land acquisition budget is over $92 million for FY 2008. The ROW division of the MDOT and local public agencies spent over $56.5 million dollars in fiscal year 2008 on property acquisition including relocation assistance. The total parcels that were acquired by the ROW division in fiscal year 2008 were 978 compared to 695 in fiscal year 2007. Currently, it employs approximately 60 entry level and senior staff ROW
agents and another 50 supporting administrative staff and 30 contract service employees.

Transportation projects are developed to serve public needs for many years to come, with that in mind, extensive information is needed before starting the construction phase. Several routes are chosen and environmental, traffic flow, economics, social, property and engineering studies are made to determine which route will accomplish the greatest public service. During the environmental study, local residents, federal and state and local agent's opinions are solicited to assure that the public is given every opportunity to participate in the transportation projects' development. In addition, public hearings and meetings are held where individuals are given an opportunity to express their point of view of the project. After full consideration is given by the location and the design committee, a specific proposal is recommended to the transportation commission for approval (9). Once the environmental process is completed and the FHWA concurrence has been obtained, the ROW division is instructed to start the ROW acquisition process.

The duration is empirically determined at the initiation of the project planning phase by the ROW division staff. It is based on past experience and prior history of similar projects. Time and recourse for starting actual construction plans for the planned project is based on this empirical duration. There are no models or software to use, but if a model was available, then project construction could be assigned in a timely manner to ensure a better use of time and resources. During the acquisition process, ROW maps are developed, property
deeds are prepared, property valuations are made, offers are submitted, properties acquired, and displaces are relocated by the ROW agents staff. Only when this process is completed, bids for the construction phase of the designed project can be solicited.

Acquiring the ROW in a timely manner is an important element of the actual construction of the projects that is required in order to begin construction by an approved schedule. Property that is needed for transportation construction or improvements projects comes in all sizes, shapes and related problems. The new transportation projects or improvements do not usually require the purchase of the entire property or land from owners, but rather a fraction of the land is needed and this is referred to as a partial acquisition. The parcels of land needed for transportation projects are then staked on the field by the district survey crew with different color flags to identify the proposed ROW lines for the property owners. The land valuation is prepared based on fair market value.

Figure 2.1 shows the ROW acquisition flowchart that is usually followed by DOT to acquire needed parcels for highway construction projects. This flow chart is developed for this research work.
Figure 2.1  ROW Acquisition flowchart

The following definitions are commonly used for terms in Figure 2.1:

1. **Title** This identifies who owns the property. This is determined from the records of local courthouses with emphasis on legal ownership.
2. **Survey Maps & Deeds (SM&D)** where maps and legal descriptions of property are prepared.

3. **Appraisal** this is the process used to determine property value. This process might include all or some of the followings, meeting with property owner, inspection of the property, checking recent sales of properties in the neighboring areas, and preparation of property valuation report.

4. **Review appraisal** this review is made to ensure that appraisal reports are complete, consistent, correct, and prepared according to the individual state rules and regulations.

5. **Acquisition** This process is initiated by contacting property owner to present and explain the fair market value offer, secure properly signed instruments from landowners and mortgage holders and send invoices to title section for payments.

6. **Condemnation and Revisions** If acquisition negotiation is unsuccessful, as in item 5, and the file has been recommended for condemnation then the file will be directed to the legal section. If there is a revision in the file, then it will be directed back to the reviewer for further examination of the revisions requested.

7. **Legal** The Legal Section will prepare all the necessary paperwork and obtain a warrant in the amount of the “Statement of Value”, file the case in court, and deposit the warrant with the clerk of the court.

8. **Court Cases** Parcels that are handled through the legal system.
9. **Payment/Title** This is the final step in the acquisition process to ensure agreed amount paid and mailed to the property owner. Updating title ownership and recording it are done at the end of this stage.

### 2.2 ROW Appraisal/Review Process

The appraisal, as shown in figure 2.1, is the most important step in the ROW acquisition process in order to determine the price to offer property owners for parcels that need to be acquired for construction projects. This process can be complex and may lead to major delays if not managed properly.

The research on this subject matter revealed that the ROW appraisal process at MDOT usually moves through the following sequence of steps:

1. Project funding approval by the appraisal section manager or supervisor is checked to determine if the initial appraisal process can proceed.

2. All project instruments (deeds, maps, title list) are handed to the appraisal agent before the start of the project. If MODT staffs do not receive a completed project instrument, this can cause delay.

3. Site inspection is usually made to determine the personnel needed for the task. The section manager or supervisor makes the general project assignments to selected appraisers. Sometimes this step is difficult to accomplish before the assignment due to time limitations and is often missed.

4. Project site inspection is usually made by the assigned appraiser to determine the type of properties to be evaluated. During the inspection, all
relevant features of the property are noted by the appraiser such as any recent improvements made to the property. The time required for inspection varies considerably from property to property.

5. Deraignment of title for each property is checked. The agents identify any property remainder that is of no value to the property owner and with the concurrence of the ROW staff reviewer, an x-deed file is set-up. Inexperienced appraiser may miss this step.

6. Collection of specific information on the project is made by the appraiser. The data may include; area, neighborhood, the community and county in which it is located, as well as demographics, utilities availability, public services, flood areas, significant business closings, openings, hiring, layoffs, or other infrastructure projects, local employment centers, and findings from interviewing local real estate professionals. Then, the appraiser researches county deed records to find sales of property in the project area and other areas. Usually and preferably the search looks for properties within the county that are considered to be comparable to the project area. The purpose is to find sale history of properties that have transacted within the past 5 years. Sales confirmation and associated research and data collection is one of the most time consuming in the entire appraisal process. This process of becoming familiar with the real estate market around the project is required by both the Uniform Standards of Professional Appraisal Practice (USPAP) and Federal appraisal requirements (16).
7. Once the appraiser assigned to the project is satisfied that enough sales data has been assembled, it is compiled into a physical “sales brochure”, and presented to the ROW staff reviewer assigned to the project. The sales data are reviewed to determine the sufficiency of the data assembled and notifies the Appraisal Supervisor to begin setting FMV to the property.

8. Generally, the appraiser is the first DOT official to contact the property owner in person or by phone to explain the need of property for the project. The appraisal agents offer the owner(s) the opportunity to accompany them during the inspection of the property to be appraised.

9. A valuation waiver of $10,000 for uncomplicated parcels is available for all ROW agents to utilize as needed and upon the appraisal section manager approval. Properties values over $10,000 must be appraised but if it is valued below that, the appraisal supervisor can approve such waiver.

10. The appraiser analyzes appropriate and comparable sale brochures data from courthouses and other sources such as brokers, sellers and buyers and arrives at an opinion of the FMV. Upon completing the appraisal report, the appraiser signs it and submits it to the ROW staff reviewer for checking. The reviewer then returns the corrected appraisal report back to the appraiser to finalize the appraisal report. Depending on the complexity of the property, the time to complete this task can take from a few hours to few weeks.
11. After completing the appraisal review report, the appraiser prepares a document officially establishing the official offer of just compensation based on the fair market value to be submitted to the acquisition section manager. This marks the start of the negotiation process for acquisition. Reaching the final appraisal report for the acquisition is time consuming and can cause delay.

Appraisal review is federally required step and it is an oversight function to assure quality of the appraisal product and ensure that the property owner and the agency's interests are both protected (14). Review can be performed by staff reviewers, but "contract" reviewers are specifically prohibited from "approving" an appraisal report to be the basis of the offer of just compensation (14). Only staff reviewers can "approve" an appraisal report and use that appraisal report as the basis to establish an offer of just compensation. Staff reviewers are the signatory authority for the establishment of the amount that is to be offered to the property owner.

Any action recommended by staff reviewers has to go through at least one additional supervisor rather than making a final decision on any unresolved issues. The appraisal review then ends in a kind of administrative limbo because of the decision avoidance. Meanwhile, the acquisition agent is left with no decision being made or delivered. The landowner usually cannot get an answer to a simple question such as why wasn't anything paid for driveways, access, fence, X-deed, or crops among other similar and simple issues. When it becomes difficult or impossible for the acquisition agent to receive a final
decision on an answer, then the landowner can become angry, and less willing to accept the FMVO.

For the purpose of this research, interviews were done with some senior staff and field agents of the MDOT ROW division to determine the steps that are usually taken in this process as well as to identify steps where probable delays are perceived to usually occur.

The following is a summary of the problems found in the required appraisal and review procedure in the ROW acquisition process that may lead to delay:

1. Reviewers are not empowered to make decisions. They are under substantial pressure to produce an appraisal value. Answering and addressing questions from acquisition agents often takes time, can involve other sections such as Title and SM&D, and making contact with the appraiser who prepared the report may not be simple task.

2. New inexperienced staff requires extensive on the job training. These staff may overlook the appraisal of minor things, such as fences, gates, wells, and driveways among others. This can cause the appraiser extra time revising their reports and thus causes acquisition delay. Additionally, an inexperienced appraiser may use a sale for comparison without recognizing that important information is missing and the sale may not be truly comparable to their subject’s property.
3. Sales confirmation and associated research and data collection are also time consuming. Accurate appraisals depend on a thorough and properly executed confirmation and data-gathering process.

4. Lack of training and failing to use the currently available information technology and networks to share information by the ROW agents and managers is causing delay in the acquisition.

5. Lack of time management in communications between managers and field agents will cause an increase in the acquisition duration such as the manager/supervisor calling the field agent for a meeting to discuss matters and in order to avoid the agent’s trip from the field to the home office.

2.3 ROW Acquisition Process

Acquisition process starts after the appraisal process is completed. The acquisition process usually moves through the following steps:

1. The acquisition agent for the project is selected by the acquisition section manager.

2. The assigned agent receives all instruments, such as quit claim deed, partial release deed and appraisal report, and ROW maps from the acquisition section manager. These instruments need to be examined for accuracy and for any missing data by the assigned agent.

3. The agent is expected to obtain updated copies of the abstracts from the courthouses and to request release of liens against property to be acquired, if any existed.
4. The agent contacts the property owner to perform property field inspection. This process is documented on an approved acquisition form by the acquisition agent.

5. The acquisition agent delivers the FMVO in writing to the property owner to start the acquisition negotiation process.

6. The acquisition agents may not be allowed to provide a copy of the appraisal report to the property owners in certain states due to internal policy and non-disclosure laws.

7. The agent listens to the land owner’s questions and concerns and relates them to the acquisition section manager and awaits the acquisition manager’s decision.

8. The agent delivers the answer from the acquisition manager with the revised FMVO in writing to the property owner and waits for his decision to sign or reject the new offer.

9. If the owner accepts the FMVO, then the agent will submit the signed deed for further process. If rejected, the agent will start the recommendation for a condemnation process for the needed parcel.

   Gathered information in this research regarding problems that some agents have encountered that contributed to the delay factors in the acquisition management process led to three major identifiable issues: 1) condemnation, 2) plans design changes and revisions, and 3) title work.

   Specific problems that are usually encountered and that are related to the delay in the acquisition process were found to include the followings:
1. Actively waiting for vital instruments that should have been delivered early in the process is either missing or need to be revised.

2. Delays in upper management answers to the concerns of the owner of the parcel. This may result in the condemnation of the parcel.

3. FMVO document provided to the landowner does not give any detail on the breakdown for each of the listed land, improvements, and damages categories.

4. Lack of effective two way communications between the acquisition agents and property owners after the start of negotiations.

5. Stakeout using different flag colors of the proposed ROW by the survey crews is not consistent and difficult to determine.

6. Missed appraising an instrument by the appraisers and reviewers, such as Q–deed, X–deed, septic tank, gate, well and fences among others. This must be done before the final offer is resubmitted to the property owner.

7. Incomplete revised plans made by the SM&D or appraisal/review sections as requested by the acquisition agents.

8. Ownership might be ill defined and not up to date at the acquisition time. Title works and definition of the owners are usually established several years before the acquisition starting date.
9. Accurate, up-to-date, and understandable legal title opinions and information via abstracts and abstract updates prior to the start of the acquisition process is often missing.

10. The lack of use of current and up-dated technology tools such as hard copies versus an electronic version which generates time lag.

2.4 ROW Acquisition Policies

Standard Operation Procedure (SOP) that provides an overview of the ROW acquisition and relocation assistance duties required by state and federal rules and regulations are usually used as well as the internal general policies of the DOT. The federal and state regulations that guide the DOT’s major acquisition policies can be described as follows:

1) There should not be any indirect or direct interest by the acquisition agents in the property to be acquired. This is required by State and Federal laws. Any interest would constitute a “conflict of interest”. Also, appraisers can’t act as acquisition agents for the same property they appraise. Any uncomplicated property that is $10,000 or less may be not be apprised by an appraiser because Federal law allows for valuation wavier by the ROW agent for the property valuation (2).

2) The best effort to meet with the property owners to discuss his concerns is expected to be made by the Acquisition agents. Among these concerns are the following:

a) The just compensation basics and the FMVO.
b) The policies and procedures that are included in the ROW acquisition guide.

c) Questions and concerns that the property owner might have regarding the offer.

3) Acceleration of the acquisition of property through agreement with the owners to avoid litigation is required by the Uniform Act (10). To avoid acquisition failure, all efforts to reach an agreement through negotiation between the acquisition agents and property owners are expected to be made. The parcel is recommended for condemnation procedure and follow-up actions if the negotiations fail.

2.4.1 Condemnation

The power of eminent domain (ED) is then used when an agreement between the property owners and ROW acquisition agents can’t be reached. Some of the common reasons for condemnation are:

1. Refusal of the property owners’ to accept the FMV offer for any reason that could not be resolved through negotiation.

2. If the property owner is a legislator in the State Government. This acquiring will be directed straight to the ED to prevent appearances of any conflict of interest.

3. Problems related to title issues, such as property tax delinquencies and record of heirship.

A condemnation file usually includes all or most of the followings:
1. Recommendation for condemnation form signed by the acquisition agent (See Appendix A).

2. Agent’s contact report (See Appendix B).

3. A signed Federal Form W-9 by the property owner.

4. Acquisition agent’s FMVO copy (See Appendix C).

Once the condemnation process is approved the ROW will add the parcel to the agenda of the transportation commission for approval. The parcel being condemned is then sent to the legal section. From this point on, the ROW agent will no longer have contact with the property owners.

2.4.2 Eminent Domain Process

The Mississippi Transportation Commission has the power to acquire property for public use in exchange for just compensation payment through a legal process called Eminent Domain (ED). This is a costly and lengthy process and should be avoided if at all possible. Following the commission’s approval for condemnation and the attorney assignment by the Attorney General’s Office, the legal section provides a letter to the condemnation squad staff to prepare the condemnation package this usually include the following:

1. Survey or field verification of the parcel by the condemnation squad of the ROW SM&D section

2. Acquisition map with shaded area of the condemned parcel

3. Transportation commission order

4. Deed description and the title report
5. Names of the engineering and value witnesses and the agents that prepared the FMVO

The legal process may take months and years to complete. However, the right of entry (Quick Take) process to gain immediate title and possession of said property, while the condemnation case is still active, is available to the DOT authorities. A court hearing for just compensation can be determined at a later date.

2.4.3 Uneconomic Remnants

If it was determined by the acquisition agent and the property owner that the reminder of the property is of no value to the property owner DOT usually offers to purchase the reminder of the acquired parcel. The acquisition of the uneconomic remnant property, as an X-deed, is similar to the regular warranty deed process. However, the owner is not required to sell it, but the FMVO for the uneconomic remnant legally expires within 90 days after the final settlement. DOT does not acquire uneconomic remnant property through eminent domain.

2.5 Transparency and the Law

Collecting historical sales data and gathering data for market analysis are critical functions in the appraisal and acquiring process of personal property. In non-disclosure status states, such as Mississippi, a lack of transparency occurs when sales information is not publicly published or accessible. Determining the FMV when comparable sales data is not a part of the public record, lack of transparency, makes the process questionable and challenging.
In non-disclosure states, like Mississippi, continuing delays in the right of way acquisition process are known to occur. The lack of transparency affects the property owners, as it makes it difficult for them to compare prices and validate their own opinion for the “market value” of their property. It is also one of the direct causes of suspicion, uncertainty, additional costs and frustration injected into the process of right of way acquisition.

The lack of price disclosure carries substantial implications for the appraisers hired by the DOT right of way division to perform market value appraisals. Under federal regulations of the Uniform Act, an appraiser is required to personally confirm details of real estate transactions (comparable sales) with all parties involved in the transaction, seller, buyer, attorney and broker. The standard process requires the appraiser to collect deeds in local courthouses and then contact the buyer or seller and request information on the transaction, such as sales price, condition of the property and how long it took to sell. This has always been a time-consuming process, and the non-disclosure rules serve only to create more obstacles. In non-disclosure status states, appraisal agents are not allowed to access sales information from other sources such as the Multiple Land Service (MLS). Agents are compelled to rely on brokers and private real-estate agents for sale information around the project area, where no public sales information available. Mississippi is one of only few states with non-disclosure status. Other states are Montana, Alaska, North Dakota, Utah, Texas and Wyoming. In non-disclosure status states, the property owners are presented the FMVO by the acquisition agents. The agent verbally explains the figures in the
FMVO based on the appraisal report, but without the actual copy of the appraisal report. Property owners are required to complete their own appraisal at their own expense or “take on faith” that the FMVO presented by the agent is fair. It becomes easy to understand why a property owner would have a suspicious reaction, especially if they think, “they must be hiding something, that’s why they are not showing me the report.” Uncertainty is certain to follow when an offer is made in this manner.

Based on the research, it was established that changing the disclosure law in Mississippi would help reduce the ROW acquisition duration process as follows:

1. Under the current law, collecting deeds in the project area and calling the grantor and/or grantee to persuade property owners to reveal the transaction price by explaining why the information is needed was found to be time consuming. Explaining the reason does not always guarantee the property owner will reveal the transaction price. Even after the agent explanation, property owners may ask for additional information and may still not reveal the price. This leads to further delay in the process. The time spent on gaining the most important information, price, would be reduced with transparency.

2. Property owners and other individuals are found to be increasingly hesitant to reveal personal information due to the rise of identity theft that is not publicly available. This would be reduced with transparency.
3. Citing the privacy laws, real estate brokers do not have to reveal or verify transaction prices to the general public. With disclosure, transaction price would no longer be considered private information and the broker or attorney, one of the acceptable “participants to the transaction” under federal regulations, could confirm the transaction price since it is a public information. This will build trust and reduce the acquisition duration time.

4. In rural geographic areas fewer formal transactions may have been recorded. Families may sell property in a non arm’s length transaction or consideration other than typical. Disclosure would assist in identifying such transaction and significantly eliminate the need for the ROW agent to contact the parties regarding the sale price.

5. The availability of all transaction prices as public information was found to speed the sale verification process by allowing appraisers to focus their verification efforts on those sales that are most comparable to the properties on the project. Although the sales used in a governmental acquisition appraisal must be confirmed by a participant to the transaction, disclosure would permit governmental appraisers to perform market analyses that are not presently feasible due to the time required to collect such data.

2.6 ROW Process Challenges

During the interviews conducted among ROW section managers, staff, and senior agents several challenges that could contribute to the delay of the
ROW acquisition process were identified as “acquisition challenges”. Among these challenges are the following:

2.6.1 Revisions of Design Plans

Managing the design changes and revisions made by field and design staff is the major challenge ROW administrators and managers will face. Coordination and good communications between districts’ personnel and divisions’ engineering design teams in the design office is needed. Some of the concerns were identified as follows:

1. The engineering design teams have limited knowledge of the ROW acquisition process and their needs.
2. ROW staff is not involved or aware of the requirements of the design process for the projects.
3. Additional survey and related issues that have been missed and not verified early in the design process by the engineering design team can require additional revisions.
4. The need for re-appraisal after the delivery of requested revisions by the acquisition staff.
5. Re-appraisal of missed permanent or temporary easement at the end of the acquisition process.
6. The requested X-deeds by the property owner or the acquisition agent need to be considered early by the ROW appraisals or SM&D section again in order to avoid re-appraisal.
7. Miscommunications between field agents and design staff to the nature of change and revisions.
8. Increasing the acquisition agents' work load while the waiting on revisions to be completed.

2.6.2 Legal and Litigation Challenges

ROW acquisition is an economically and socially sensitive issue because it deals directly with the public. Delivering ROW acquisition in a timely manner with fair market cost is a challenge ROW administrator and managers are constantly facing. Compliance with the Uniform Act of 1970 is required at all times for the acquisition relocation of right of way. Although the Real Property Acquisition Polices Act of 1970 (Uniform Act) serves an important public purpose by providing protection to affected owners and tenants, these requirements can at times impede the ability to timely purchase of the ROW necessary for a transportation corridor.

ROW administrators and managers are known to have some understanding of the legal process affecting the acquisition process. ROW administrators and staff are usually faced with different challenges regarding the legal issues. Condemnations, eminent domain, court procedures, lawyers, hearings and administrative settlement are not simple legal matters. Specific legal concerns that can impact the time delay in the acquisition process through legal means are described below:
1. Information requested by the staff attorney in the legal section. This information may include surveys from the district and new appraisal reports to start the right of entry process.

2. Decisions on the field that the ROW agents are not empowered to make such as administrative adjustment decisions resulting in condemning the property. Property owners’ concerns and questions that are not addressed in timely manner and that lead to the condemnation process.

3. Lack of coordination between law firms and staff attorneys for court hearings

4. Non-disclosure status and the lack of transparency in the ROW acquisition process.

2.6.3 Challenges in the Title Work

The Title Section of the ROW Division normally has the duties to determine the real property ownership and any other interests that need to be acquired for the project. Coordination between the title section, SM&D Section and Acquisition Section in the ROW division is needed in order to avoid delays in the acquisition process. Title agents usually perform an extensive search of the public records to identify and correct liens, judgments, easements and other legal impairments to the real property to be acquired. Title agents may perform at the local courthouses the title chain of the property owners backwards up to 32 years to ensure the title is in order and nothing is missing. This title work search of public records is not only to protect property owners but also can have an
economic impact by identifying tax payments to the local and federal government. The Title Section also handles the sale of surplus property to a ROW parcel and uneconomic remnants (X-deed). Previous or current adjoining property owners, depending on the type of acquisition, may have first right of refusal. Title agents are expected to ensure that the compensation amount is correct and the names on the deed and the maps are one and the same. Agents usually compare the FMVO, the appraisal report, the invoice and the deed to ensure the complete accuracy of the deed signed and the compensation amount paid. Some of the challenges that title agents face as far as acquiring ROW in a timely manner may include the followings:

1. Determining all persons who have an interest in the subject property along with their names and addresses and its accuracy.
2. Finding all liens against the property.
3. Checking if all taxes federal and state, have been paid.
4. Verifying that all easements/rights-of-way across the property are found and included.
5. Reviewing the owner’s name accuracy for payments by checking obstructs and comparing the names to the tax maps for name and acreages accuracy.
6. Ensuring that the amounts to be paid are correct and the deed signature are proper and acknowledged.
7. Checking that banks have signed partial releases, if needed.
2.6.4 Other Challenges

There are several challenges that are not part of the acquisition procedure, external, but directly or indirectly contribute to the duration of the ROW acquisition:

1. Environmental issues such as wetland.
2. No significant impact certificate is provided by FEMA. This releases the project to begin.
3. Sites that the ROW has no power to use ED, such as archeological sites.
4. Parcels that contain serious utility issues.

2.7 Consultant Services

Interviews were conducted with some ROW consultant staff. Private consulting services commonly and usually are used by DOT to acquire ROW. The interviews indicated that private consultants believe that they complete acquisition of parcels in a shorter time than the DOT ROW agents. Sometimes, the private consultants receive financial incentives to complete the work faster.

During the interviews, the staff consulting services were asked about the methodology and technique used for appraising and acquiring property. The major findings can be summarized as follows:

1. The consultants’ staff receives a completed project instruments, deeds, maps, and all information needed at the start of the project. This move allows them to start working early and with minimum delay.
2. Consultant’s staff usually makes one field trip to gather all needed project information and then return to the office to complete the project.

3. Consultants frequently utilize the one agent call method. This allows the staff to perform multiple tasks using one agent to reduce the acquisition duration.

4. Consultants’ staff uses effective communications techniques, including emails, voice mail, memos and others, to share information among themselves and with DOT staff to save time.

5. Consultant’s staff utilizes Multiple Listing Service (MLS), brokers, investors and local real-estate agents among other sources, to gain sale price information.

6. Consultants’ staff tends to follow up on revisions and other needed project information relatively fast. They utilizes administrative adjustment frequently
CHAPTER III

REVIEW OF CURRENT PRACTICES BY NEIGHBORING STATES

3.1 Review and Evaluation of Experiences of Neighboring States

As a part of this research ROW administrators and managers from other neighboring states and consultants from private acquisition firms were contacted by email. Each was asked about the factors that contributed to the ROW acquisition duration delay and what were the best practices and techniques used by each to address reduction of the ROW acquisition duration. The transparency factor was also reviewed to determine its impact on the acquisition duration.

3.2 Review of Other Practices

An initial contact was made to six neighboring states’ DOTs to solicit information and gain knowledge of the ROW acquisition process at these DOT agencies. The following states were contacted:

1. Tennessee Department of Transportation (TNDOT)
2. Louisiana Department of Transportation (LADOTD)
3. Arkansas State Highway and Transportation Department (ARDOT)
4. Georgia Department of Transportation (GDOT)
5. Texas Department of Transpiration (TxDOT)
6. Alabama Department of Transportation (ADOT)
Only 4 of the contacted state transportation agencies responded to the questionnaire sent to them.

3.2.1 Tennessee Department of Transportation (TNDOT)

1. TNDOT uses a team approach, includes input by ROW staff in the early project design process to reduce design changes. This is to ensure open communications between divisions and to have input and communication between design teams early in the project development process in order to reduce revisions and minimize errors.

2. The law in Tennessee was changed in 2000 from a non disclosure status to a disclosure status state. Disclosure status (transparency) means that the sale price associated with a deed is recorded as public information. This allows the TNDOT appraisers and other agents to access the property sale price from the recorded deed. This process made sale price information accessible at any time. The information is public record and the extra time spent collecting data in non disclosure status states is eliminated. The TNDOT acquisition agent also provides a copy of the appraisal report to the property owner and this creates greater trust by the owner.

3. TNDOT allows an increase, as determined by the ROW manager, in the valuation waiver amount to help speed up the appraisal process time.

4. TNDOT uses mediation to minimize litigation in order to reduce condemnation cases. Typically a lawyer is asked to be the mediator and try to find middle ground between the ROW and property owner. This
process according to the ROW administrator has been fairly successful in reducing the number of condemnation cases. TNDOT acquires an average of 1500 parcels annually. Approximately 12% - 15% of the total parcels are recommended for condemnations, but most of the parcels are settled by successful mediation technique and do not go to court.

3.2.2 Louisiana Department of Transportation (LADOTD)

1. LADOTD utilizes information technology tools, such as network and intranet to gain access to reports and other project information. This eliminates the need for to share between agents and consultants to wait on hard copies.

2. LADOTD faces a constant struggle with the State Legislature trying to define their process by adding new clauses/terms or words to the current legal process that often leads to acquisition delay. The ROW legal section is working hard to review of proposed legislation to try to prevent or reduce the impact that may be caused by such legislation. Louisiana is the only state that is governed by civil and not common law.

3. LADOTD uses a process called Joint Plan Review (JPR) to reduce or eliminate revisions (change design) to the design if possible. When 60% of the ROW maps are completed the process will start by arranging a meeting for all parties involved in the design process to make suggestions and recommendations at an early stage of the project development.

4. LADOTD institutes a 90 day limit on the negotiation “appraise and acquire” process to keep up with the federal regulations and to prevent the agents
from becoming inactive. The 90 day limit keeps agents up-to-date with their work assignments.

5. LADOTD acquires an average of 800-1200 parcels annually and has a high percentage of total parcels acquired through the condemnation process (25%).

6. LADOTD institutes an Administrative Settlement Policy process by taking into consideration the property owner’s counter offer(s) to justify the appraised compensation amount. This is done in order to reduce the condemnation cases. Louisiana (LA) is a disclosure status state. In addition, the law in LA permits a copy of the appraisal report to be provided to the property owner, if requested, to promote transparency and enhance trust and communications.

7. LADOTD utilizes condemnation with quick take authority in mind. If the property is not occupied, possession is immediate on service of process, if occupied then possession is within 30 days of the service of process.

8. LADOTD claims that more than 30% of all ROW transactions are handled utilizing the valuation waiver process. They also claim this valuation waiver process has contributed significantly to the reduction of total expenditure and duration, by reallocating resources.

3.2.3 Arkansas State Highway and Transportation Department (ARDOT)

1. ARDOT acquires an average of 1300 parcels annually with 10% - 13% of parcels recommended for condemnation. However, the percentage of the
parcels acquired through condemnation by trial is much lower than initial numbers.

2. According to ARDOT, cross training and educating acquisition agents about the appraisal process has had a positive impact on the duration. This enables the acquisition agent to explain and answer in a timely manner all the property owners’ concerns and question. Additionally, the acquisition becomes more transparent when providing a property owner with an appraisal report copy if requested.

3. The ARDOT requires the acquisition agents to submit a weekly status report on each parcel assigned to them. This is done in order to keep track of the contacts frequency between the agent and the property owner. According to ARDOT this will ensure that the property owner has had gotten all his questions and concerns addressed properly.

4. ARDOT uses an early inspection technique to head off any surprises the agent might encounter during the negotiation process. The acquisition agents are required to inspect the property to be acquired for any changes that may have been missed by appraisal and correct them, before meeting with the property owner, to reduce the acquisition delay.

5. The ARDOT field agents are empowered and encouraged to make decisions if justified using an administrative adjustment process. The acquisition agent is authorized to negotiate an adjustment of no more than $500 per parcel, if the property owner comes back with a counter offer larger than $500 the agent will bring the offer to the acquisition officer who
is authorized to negotiate an adjustment of no more than $2000 in order to settle and prevent the case for going to court.

3.2.4 Georgia Department of Transportation (GDOT)

1. GDOT acquires an average of 2870 parcels annually with 11% - 13% of the parcels recommended for condemnations. Half of the cases are settled by fresh negotiations using the administrative appeal office.

2. Better clarification of the scope of the appraisal assignment in the pre-acquisition stage led to a better negotiation position for the ROW acquisition agents.

3. GDOT utilizes the Administrator Appeal Process (AAP) which is best described as a central office review. Before the parcel is recommended for condemnation, a high level, experienced agent is assigned from the central office to make a last effort to reach a settlement with the property owner. According to the ROW administrator, this process has been very successful with a 50% reduction in the condemnation cases when the APP is involved. If a negotiation is unsuccessful the property owner will be notified by letter that allows the property owner to utilize the AAP within 10 days if he wishes.

4. Georgia is a disclosure status state. GDOT policy will not allow the acquisition agents to provide a copy of the appraisal report to property owners. However, extra negotiation time is required to allow the acquisition agent to review the appraisal report before the start of the negotiation. Thus, it allows the acquisition agent to become transparent to
present the appraisal report findings to the property owner. A revised and updated appraisal report may be requested by the acquisition agents to make a final offer to reach a settlement before the condemnation process starts.

5. The GDOT requires the title and possession on all parcels to be secured before the start of construction activities.

6. All plan revisions that caused acquisition delay (with the amount of time lost) is recorded in the data system. This allows the designer to request a change in the original schedule plan accordingly.

Reduced parcel load and extended schedules allow the acquisition agents to have more negotiating time to deal with the property owners’ questions, issues and requests, complaints, etc., to reach a positive conclusion with the property owner.

3.3 Review of States Reported Impact of Transparency

Based on the emails review, ROW administers with three neighboring states, TN, AR and LA estimated the amount disclosure status decreased their condemnations. Amount varied from 5 – 25%.

Table 3.1 shows the average number of condemnation cases before and after the disclosure status law in each of those states.
Each state DOT is approaching the acquisition process differently from other ones and has implemented some programs that best reduce the acquisition duration. Allowing more time for the negotiation, use of the APP and request of revised appraisal reports resulted in reduction of condemnation cases. The use of an arbitration/mediation methods as well as agents cross training between ROW sections also resulted in a reduction of duration. The use of information technology enhanced the acquisition process by allowing the agent to gain immediate access to appraisal, reviewer reports without waiting on the report's hard copy. This resulted in time and cost saving during the ROW project acquisition activities. Disclosure status brought transparency to the acquisition process that helped reduce duration in some states.
CHAPTER IV

FACTORS ASSOCIATED WITH ACQUISITION DURATION

4.1 Analysis Methodology

To statistically examine factors that contributed to the delay in the ROW acquisition process a retrospective, review of randomly selected completed projects was done to find statistical significance among the independent variables hypothesized to affect the duration. A mathematical regression model was developed from this analysis that is expected to assist in the prediction of the duration for ROW acquisition of new projects.

4.2 Parcel Tracking System (PTS)

The ROW PTS is the primary software developed and used by DOT to track parcels activities throughout the state. It maintains data related to the ROW acquisition activities including the dates of the project initiation and completion, specific characteristics of the parcels, and request of financial information. The physical files of the acquired projects are stored in the ROW files. The completed projects from 1/1/2003 – 12/31/2007 for the MDOT were extracted from the PTS database and ROW physical file room. The physical files were used to complete information in the PTS when it was incomplete.
4.3 Data Design

Information from the MDOT parcel tracking system was incorporated into an excel spreadsheet. The following variables were collected on each project and each parcel within the project:

1. The FMS project number
2. The number of parcels in each project
3. The parcel number and its characteristics, such as location (rural or urban), size and cost
4. The acquisition agent type DOT staff or consultants,
5. The start of the negotiation date
6. The FMVO submission date
7. The parcel acquisition date
8. The parcel fair market value
9. The acquisition through negotiation date
10. The acquisition through condemnation date
11. The number of project revisions

All collected data from the PTS in the dataset were processed for missing data or mistakes utilizing the physical files from the ROW files. Incomplete projects were removed from the data set.

4.4 Data Analysis

Variations such as scatter plot, correlation, single regression, t - test and one way Analysis of Variance (ANOVA) were used to better understand the data that were collected. Two analysis methods were used, descriptive analysis to
summarize patterns and general trends in the data set, and detailed analysis using regression to find the factors that impacted the ROW acquisition duration delay. A descriptive analysis of the acquired parcels in each project was performed. Variables analyzed were the number of parcels per project, location of parcels, number of condemnations, number of negotiation, the number of revisions in the project, the type of the acquisition agent, and the total acquisition duration in days per project. The parcel with maximum acquisition duration is used as the length of time to complete the acquisition for the project.

Based on the collected data and review of the acquisition process, variables were utilized to represent hypothesized factors in the ROW acquisition duration. The first selected variable was named “rural” or “urban”. Each parcel was defined as rural or urban based on specific criteria. According to the appraisal manager’s description, if the parcel was located within the city limits and/or the immediate surrounding areas of the city then it would be classified as urban, otherwise the parcel was classified as rural. To review the location of the parcel, MapQuest™ and Google™ Earth were used to locate the project. The county name and highway number were entered to determine where the parcel was located and whether it was within a city limit or outside. The next variable created was defined as “who” was the acquisition agent. If the acquisition agent was employed by in house staff the variable acquisition agent, was labeled “in-house”. If the acquisition agent was from a contracted private consultant firm, then the acquisition agent was labeled “Consultant.”
Next variable was defined as “condemnation” was properties that were acquired through the legal system and negotiation was properties that were acquired through the normal negotiation process. Finally, the variable revisions were defined as the number of times where the acquisition process is restarted due to change in the parcel such as parcel size, name change or adding new one, etc.

To minimize the total number of variables, a ratio was used to combine rural and urban, in-house and consultants, condemnations and negotiation into single variable called “Rural Ratio”, “in-house Ratio” and “Condemnation Ratio”, respectively. These new ratio variables were used in the regression analysis to develop the regression mathematical model to predict duration of new projects.

A total of one hundred and eighty (180) projects were found in the PTS database. In order to use the normal distribution central theorem limit and to achieve statistically significant sample, a minimum of approximately 30 projects was sampled. In this research forty (40) randomly selected completed projects (see appendix D) were used for detailed analysis. The projects were listed in a spreadsheet format and every other project was selected from the 180 projects found in the PTS. The data were divided into subsets, (subset A) contains 35 completed projects (see appendix E) to be used for analysis and (subset B) contains 5 completed projects (see appendix F) for the verification of the prediction equitation for the acquisition duration. Prior to the data analysis a scatter plot of the 35 selected projects was used to visualize and identify outliers in the data. When an outlier was found the data was examined to determine
whether the outlier was a typographical error or a mistake, and should be removed from the data analysis. If the outlier had biased the data and found to be invalid then this justifies its removal. Multi regression was used with and without the outlier to look for any changes in the data. One outlier was identified and removed from Subset. Correlation and single regression analysis was used to test the significance of the individual independent variables impact on the dependent variable. A standard multi regression analysis was used on 34 selected projects (subset A) to develop a model to predict duration and the 5 projects (subset B) were held back for model validation. T-test was performed on 1445 parcels to test for the Null hypothesis (Ho) that there is no significant difference among the categorical independent and dependant variables. The p value of < 0.05 was used to test for statistical significance.

4.5 Method of Model Validation

Statistica7.0 is statistical analysis software that was used to develop a model to predict acquisition duration for new projects. The model was developed utilizing the standard multi regression. Subset A projects were used to develop the regression model.

Validation of the model was done utilizing Subset B, completed projects withheld from the statistical analysis. Additionally, the assumption of linear relationship between variables and the residuals normal distribution was also checked.
4.6 Descriptive Analysis of 5 Years PTS Data

One hundred eighty completed projects were found from 2003 - 2007 utilizing the ROW PTS and physical files of the DOT ROW division. A descriptive summary of the parcels included in these projects is shown in table 4.1.

Table 4.1 Distribution of total number of parcels per project in PTS for the past 5 years (2003-2007)

<table>
<thead>
<tr>
<th>Number of projects in PTS 2003-2007</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of parcels</td>
<td>3413</td>
</tr>
<tr>
<td>Mean parcels per projects</td>
<td>19</td>
</tr>
<tr>
<td>Median parcels per project</td>
<td>5</td>
</tr>
<tr>
<td>Standard deviation of parcels per project</td>
<td>39</td>
</tr>
<tr>
<td>Range of parcels per project</td>
<td>1 - 255</td>
</tr>
</tbody>
</table>

Table 4.1 shows that the average number of parcels per project is 19 parcels and the median is 5 parcels. This indicates that, the number of parcels per project is relatively very small. This simple statistical variation is of importance because it shows that in spite of the multiple complicated variables that enter into the ROW acquisition, the expected number of parcels per project is relatively controllable.

Table 4.2 shows that 76% (137 projects) of the projects found in the PTS had 20 or less parcels per project and 24% (43 projects) had more than 20 parcels per project.
Table 4.2  Range of parcels per project in the PTS

<table>
<thead>
<tr>
<th>Range of number of parcels per project</th>
<th>Number of projects</th>
<th>Percentage of total projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 10</td>
<td>119</td>
<td>66%</td>
</tr>
<tr>
<td>11 – 20</td>
<td>18</td>
<td>10%</td>
</tr>
<tr>
<td>21 – 30</td>
<td>19</td>
<td>11%</td>
</tr>
<tr>
<td>31 – 45</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>46 – 90</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>91 – 130</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>131 – 175</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>176 – 215</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>216 – 255</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>3413</td>
<td>180</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.3 shows that the primary acquisition method for the 3413 parcels was 88.7% through negotiation and 11.3% by condemnation. This is consistent with the usual expectations of ROW administrator and managers. This also implies that for acquisition the primary emphasis of time management might lie in the time it takes to negotiate the acquisition of as many parcels as possible.

Table 4.3  Negotiation VS condemnations of acquired ROW parcels

<table>
<thead>
<tr>
<th>Procedure for acquiring ROW</th>
<th>Number of parcels</th>
<th>Percentage % of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negotiation</td>
<td>3026</td>
<td>88.66%</td>
</tr>
<tr>
<td>Administrative judgment</td>
<td>267</td>
<td>7.82%</td>
</tr>
<tr>
<td>Court Awarded (Condemnation)</td>
<td>120</td>
<td>3.52%</td>
</tr>
<tr>
<td>Total number of parcels</td>
<td>3413</td>
<td>100%</td>
</tr>
</tbody>
</table>
4.6.1 Selected 40 Sample Completed Projects

Forty completed projects were randomly selected for detailed analysis and presented in the next section.

Table 4.4 represents subset A of completed projects with the number of parcels ranging from 4-172 per project. There was an average of 42 parcels in subset A with a total of 1478 acquired parcels.

Table 4.4 Descriptive analysis summary of the subset A projects

<table>
<thead>
<tr>
<th>Total completed projects</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of parcels</td>
<td>1478</td>
</tr>
<tr>
<td>Mean parcels per projects</td>
<td>42</td>
</tr>
<tr>
<td>Median parcels per project</td>
<td>28</td>
</tr>
<tr>
<td>Standard deviation of parcels per project</td>
<td>43</td>
</tr>
<tr>
<td>Range of parcels per project</td>
<td>4 - 172</td>
</tr>
</tbody>
</table>

Table 4.5 shows that 40% (14 projects) of the projects had 20 or less parcels per project and 60% (21 projects) had 20 or more parcels per project. The variation of mean and median distribution between this subset and the overall distribution of projects found in the ROW PTS (Table 4.1) is due to the probability of a random variation of a particular size (from the population mean) decrease with the increase in the sample size. As with all research, the data was randomly selected and might not truly represent the population. This research examines only a small part of a larger ROW acquisition process.
Table 4.5  Range of parcels per project in the selected subset A

<table>
<thead>
<tr>
<th>Range of number of parcels per project</th>
<th>Number of projects</th>
<th>Percentage of total projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 –10</td>
<td>7</td>
<td>20%</td>
</tr>
<tr>
<td>11 – 20</td>
<td>7</td>
<td>20%</td>
</tr>
<tr>
<td>21 – 30</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>31 – 45</td>
<td>7</td>
<td>20%</td>
</tr>
<tr>
<td>46 – 90</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>91 – 130</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>131 – 175</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>1478</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

The review showed that the primary acquisition method for the 1478 parcels in the 35 projects was as shown in table 4.6. Based on interviews with the ROW acquisition managers and administrators, it was noted that usually 8%-13% of parcels were acquired through condemnation. Thus, this finding was confirmed by the statistics of the records with 10.7% that were acquired by condemnation and 89.3% were acquired through negotiation.

Table 4.6  Primary acquisition method of parcels

<table>
<thead>
<tr>
<th>Procedure for acquiring ROW</th>
<th>Number of parcels</th>
<th>Percentage % of parcels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negotiation</td>
<td>1335</td>
<td>89.30%</td>
</tr>
<tr>
<td>Condemnation</td>
<td>143</td>
<td>10.70%</td>
</tr>
<tr>
<td>Total</td>
<td>1478</td>
<td>100%</td>
</tr>
</tbody>
</table>
4.6.2 Descriptive Analysis of the Acquisition Duration

Table 4.7 below provides a descriptive duration analysis of subset A projects that were acquired through the legal system (condemnation), and through the negotiation process.

Table 4.7  Acquisition duration summary in the subset A selected projects

<table>
<thead>
<tr>
<th></th>
<th>Acquisition duration (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Condemnation 23 projects</td>
</tr>
<tr>
<td></td>
<td>Negotiation 12 projects</td>
</tr>
<tr>
<td>Mean</td>
<td>654</td>
</tr>
<tr>
<td>Median</td>
<td>646</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>309</td>
</tr>
<tr>
<td>Range*</td>
<td>1452</td>
</tr>
<tr>
<td>Minimum</td>
<td>223</td>
</tr>
<tr>
<td>Maximum</td>
<td>1675</td>
</tr>
<tr>
<td></td>
<td>231</td>
</tr>
<tr>
<td></td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>375</td>
</tr>
<tr>
<td></td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>449</td>
</tr>
</tbody>
</table>

* Difference between maximum and minimum

It is worth noting the following observation of the duration when comparing the data in cases with and without parcels acquired through condemnation. The difference in projects’ maximum duration with condemnation cases involved, 23 projects, was 1675 days (4.6 years) while the maximum project duration without court cases involved, 12 projects, was 3.4 year less at 449 days (1.2 years), a reduction of 1226 days for negotiation versus condemnation. This supported the general expectations made for ROW managers and administrators on the effect of condemnations on duration.
4.6.3 Descriptive Analysis of the Number of Revisions

Table 4.8 shows a total number of 772 revisions in the 35 completed projects. A revision is registered each time the acquisition process is restarted due to a change to the parcel, such as change in the parcel size, change in the title name, etc. There was an average of 22 revisions per project. This is important because revisions to the project are expected to cause delay in the time to complete acquisition.

Table 4.8  Distribution of total number of project revisions

<table>
<thead>
<tr>
<th></th>
<th>Number of revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>22</td>
</tr>
<tr>
<td>Median</td>
<td>12</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>32</td>
</tr>
<tr>
<td>Total Revisions</td>
<td>772</td>
</tr>
<tr>
<td>Range</td>
<td>0 - 174</td>
</tr>
</tbody>
</table>

4.6.4 Descriptive Analysis of Parcel Location and Agent Type

Descriptive analysis was performed on the location of parcels (rural and urban) and the type of the acquisition agent (consultants and in-house). Frequency Table 4.9 was constructed to examine the relationship between the independent variables and duration.
Table 4.9 Frequency of parcels characteristic and acquisition duration in days for in-house vs consultants

<table>
<thead>
<tr>
<th>Less than</th>
<th>Consultants</th>
<th>in-house</th>
<th>Total Parcels</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 days</td>
<td>166</td>
<td>253</td>
<td>419</td>
</tr>
<tr>
<td>60 days</td>
<td>294</td>
<td>346</td>
<td>640</td>
</tr>
<tr>
<td>90 days</td>
<td>374</td>
<td>419</td>
<td>793</td>
</tr>
<tr>
<td>120 days</td>
<td>460</td>
<td>460</td>
<td>920</td>
</tr>
<tr>
<td>150 days</td>
<td>535</td>
<td>512</td>
<td>1047</td>
</tr>
<tr>
<td>180 days</td>
<td>573</td>
<td>528</td>
<td>1101</td>
</tr>
<tr>
<td>210 days</td>
<td>620</td>
<td>536</td>
<td>1156</td>
</tr>
<tr>
<td>240 days</td>
<td>650</td>
<td>547</td>
<td>1197</td>
</tr>
<tr>
<td>270 days</td>
<td>676</td>
<td>555</td>
<td>1231</td>
</tr>
<tr>
<td>300 days</td>
<td>694</td>
<td>565</td>
<td>1259</td>
</tr>
<tr>
<td>330 days</td>
<td>707</td>
<td>577</td>
<td>1284</td>
</tr>
<tr>
<td>360 days</td>
<td>713</td>
<td>585</td>
<td>1298</td>
</tr>
</tbody>
</table>

Table 4.9 summarizes the characteristics of the acquisition agent type that acquired parcels for projects in subset A and the associated acquisition duration in days. This is displayed graphically in Figure 4.1. This presentation is evidence that the higher the number of parcels the more efficient in-house agents are than consultants. As shown in Figure 4.1, the break line is at around 460 parcels, and this corresponds to acquisition duration of 120 days.
Of the parcels from completed projects acquired in less than 30 days, 60% were acquired by in-house staff and 40% by the contracted consultants. As acquisition duration increased (duration ≥ 30 days) the contracted consultants were responsible for 65% of parcel purchases when the acquisition duration was greater than 30 days. However, the number of acquired parcels by consultants with acquisition duration greater than 120 days, increased by 55% from 460 to 713 parcels while in-house agents increased by 27% from 460 to 585 parcels for the same duration.
Table 4.10 Frequency of parcels characteristic and acquisition duration in days for rural vs urban

<table>
<thead>
<tr>
<th>Less than</th>
<th>Rural</th>
<th>Urban</th>
<th>Total Parcels</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 days</td>
<td>269</td>
<td>150</td>
<td>419</td>
</tr>
<tr>
<td>60 days</td>
<td>411</td>
<td>229</td>
<td>640</td>
</tr>
<tr>
<td>90 days</td>
<td>522</td>
<td>271</td>
<td>793</td>
</tr>
<tr>
<td>120 days</td>
<td>595</td>
<td>325</td>
<td>920</td>
</tr>
<tr>
<td>150 days</td>
<td>673</td>
<td>374</td>
<td>1047</td>
</tr>
<tr>
<td>180 days</td>
<td>704</td>
<td>397</td>
<td>1101</td>
</tr>
<tr>
<td>210 days</td>
<td>737</td>
<td>419</td>
<td>1156</td>
</tr>
<tr>
<td>240 days</td>
<td>766</td>
<td>431</td>
<td>1197</td>
</tr>
<tr>
<td>270 days</td>
<td>791</td>
<td>440</td>
<td>1231</td>
</tr>
<tr>
<td>300 days</td>
<td>811</td>
<td>448</td>
<td>1259</td>
</tr>
<tr>
<td>330 days</td>
<td>829</td>
<td>455</td>
<td>1284</td>
</tr>
<tr>
<td>360 days</td>
<td>841</td>
<td>457</td>
<td>1298</td>
</tr>
</tbody>
</table>

Table 4.10 summarizes the characteristics of the location type of parcels acquired for projects in the sample and the associated acquisition duration in days. This is displayed graphically in the Figure 4.2. This figure indicates that the ROW duration time is much higher for rural projects than urban projects.
Sixty three percent of total parcels acquired in less than 30 days were classified as rural. Sixty-five percent of the parcels acquired in greater than 30 days were rural. Title work was completed on most of the projects few years prior to the start of the acquisition process. During this pre-acquisition time changes such as, ownership, deeds description and family disputes might occur. If these are not noted before the start of the acquisition process further delay can occur. Sometimes in the rural areas a family sells property to other family members without recording the deeds in the court house. These are not discovered by the acquisition agents until the start of the acquisition process. This causes the parcels to be revised leading to additional delays to the acquisition process.
4.7 Detailed Analysis of the Dataset

This section presents the detailed analysis performed on the subset A of completed project to find the factors that contributed to delay and to develop the acquisition prediction model. Scatter plot, correlation, single regression, t – test are performed to test the significant impact of the independent variables on the dependent variable (duration).

4.7.1 Testing the Variables Significance

Scatter plots are a mathematical diagram that graphically displays values of 2 or more variables for a set of data to show the nonlinear relationship and correlation between the variables. Statistica7.0 software was used to produce the scatter plot shown below. The plot represents the independent variables (number of parcels, number of condemnations, number of revisions, number of parcels acquired by in-house agents and consultants, number of rural and number of urban) on the horizontal axes and the dependent (total duration in days) variable on the vertical axes.

Scatter plots of the 40 completed projects indicated the presence of a project with duration of 1675.4 days as a possible outlier in the data as shown in figure 4.3. Further analysis was conducted to see if the removal of the outlier would change the data significantly. The retest of the data without the outlier present in the dataset shows the improvement of the regression model from an adjusted R² = 0.50 to 0.52.

Review of the irregularities in the outlier case revealed the following:
1. The project was completed by a private consultant firm company in 2003 and contained 33 parcels. Ten of the total parcels were recommended for condemnation.

2. Most, if not all, parcels were put on hold due to a cancellation of the contract between MDOT and the private consultant. This led to the delay in completion of the project. The contract cancellation resulted from disputed charges to MDOT by the private consultant and resulted in legal action.

Based on the unusual circumstances leading to the long duration in the ROW acquisition of the project, this whole project was removed from the analysis.

Figure 4.3 Scatter plot of the 40 selected projects-indicates outlier
Correlation is a tool to measure the relation between 2 or more variables. Correlation coefficients show the linear relationship between the variables and can range from -1 to +1, the value of 1 represents perfect positive correlation and the value of 0 indicate the lack of correlation. The variables correlation matrix of the subset A projects results are shown in table 4.11.

Table 4.11 Correlation of subset A projects

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parcels</th>
<th>Condemnation</th>
<th>Negotiation</th>
<th>Revision</th>
<th>In-house</th>
<th>Consultants</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcels</td>
<td>1</td>
<td>0.73</td>
<td>1</td>
<td>0.51</td>
<td>0.62</td>
<td>0.72</td>
<td>0.1</td>
<td>0.88</td>
</tr>
<tr>
<td>Condemnation</td>
<td>0.73</td>
<td>1</td>
<td>0.68</td>
<td>0.33</td>
<td>0.76</td>
<td>0.34</td>
<td>0.34</td>
<td>0.52</td>
</tr>
<tr>
<td>negotiation</td>
<td>1</td>
<td>0.68</td>
<td>1</td>
<td>0.51</td>
<td>0.8</td>
<td>0.74</td>
<td>0.07</td>
<td>0.9</td>
</tr>
<tr>
<td>Revision</td>
<td>0.51</td>
<td>0.33</td>
<td>0.51</td>
<td>1</td>
<td>0.49</td>
<td>0.28</td>
<td>-0.12</td>
<td>0.53</td>
</tr>
<tr>
<td>in-house</td>
<td>0.82</td>
<td>0.76</td>
<td>0.8</td>
<td>0.49</td>
<td>1</td>
<td>0.2</td>
<td>0.15</td>
<td>0.7</td>
</tr>
<tr>
<td>Consult</td>
<td>0.72</td>
<td>0.34</td>
<td>0.74</td>
<td>0.28</td>
<td>0.2</td>
<td>1</td>
<td>-0.01</td>
<td>0.67</td>
</tr>
<tr>
<td>Rural</td>
<td>0.1</td>
<td>0.34</td>
<td>0.07</td>
<td>-0.12</td>
<td>0.15</td>
<td>-0.01</td>
<td>1</td>
<td>-0.38</td>
</tr>
<tr>
<td>Urban</td>
<td>0.88</td>
<td>0.52</td>
<td>0.9</td>
<td>0.53</td>
<td>0.7</td>
<td>0.67</td>
<td>-0.38</td>
<td>1</td>
</tr>
<tr>
<td>Duration</td>
<td>0.57</td>
<td>0.72</td>
<td>0.53</td>
<td>0.61</td>
<td>0.66</td>
<td>0.18</td>
<td>0.35</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Table 4.11 shows that association between condemnation, revisions, in-house, No. of parcels and duration is stronger than other variables. The correlation coefficient (r) represents the linear relationship between two variables. If this coefficient is squared, then the resulting value represents the variation between the two variables. For example, the $r^2$ of (0.72) means that 52% of the variance in duration can be explained by condemnation. It is important to know this value in order to evaluate the correlation between variables. Rural, urban and consultants has a very low relationship with the duration.

Single regression is used to determine if each variable is significant to impact the dependent variable (duration). The results of the single regression are presented in the table below.
Table 4.12 Single regression test summary

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
<th>Std. Err of Beta</th>
<th>t (df)</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcels</td>
<td>0.570</td>
<td>0.150</td>
<td>3.92 (32)</td>
<td>0.00044</td>
</tr>
<tr>
<td>Condemnation</td>
<td>0.723</td>
<td>0.122</td>
<td>39.39 (32)</td>
<td>0.00000</td>
</tr>
<tr>
<td>Negotiation</td>
<td>0.531</td>
<td>0.15</td>
<td>3.55 (32)</td>
<td>0.00123</td>
</tr>
<tr>
<td>Revisions</td>
<td>0.610</td>
<td>0.140</td>
<td>4.34 (32)</td>
<td>0.00013</td>
</tr>
<tr>
<td>In-house</td>
<td>0.346</td>
<td>0.133</td>
<td>5.61 (32)</td>
<td>0.04494</td>
</tr>
<tr>
<td>Consultant</td>
<td>0.367</td>
<td>0.173</td>
<td>1.03 (32)</td>
<td>0.03262</td>
</tr>
<tr>
<td>Rural</td>
<td>0.659</td>
<td>0.166</td>
<td>2.09 (32)</td>
<td>0.00002</td>
</tr>
<tr>
<td>Urban</td>
<td>0.179</td>
<td>0.164</td>
<td>2.23 (32)</td>
<td>0.30847</td>
</tr>
</tbody>
</table>

Table 4.12 shows the Beta coefficients are the regression coefficient that would be obtained if all variables were first standardized to a mean of 0 and standard deviation of 1. They are also comparable across variables. The Std. error field contains the standard error of the intercept and the t (df) - value and resulting p-value fields are used to test the hypothesis that the intercept is equal to 0.

The results show that independent (parcels, condemnation, negotiation, revisions, in-house, rural and urban) variables impacted the dependent (duration) variable at the 95 percent level of significance. However, consultant versus in-house was not significant to impact the duration at the 95 percent level.

Subset A was also tested with t-test for independent variable by group to examine the relationship between the dependent and the independent variables for all 1445 parcels. The results of the t-test are shown in table 4.13 below:
Table 4.13 t – test for categorical independent variables summary

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Category</th>
<th>t - value</th>
<th>df</th>
<th>P - value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condemnation</td>
<td>yes/no</td>
<td>39.49</td>
<td>1443</td>
<td>0.000</td>
</tr>
<tr>
<td>Parcel location</td>
<td>rural/urban</td>
<td>3.14</td>
<td>1443</td>
<td>0.002</td>
</tr>
<tr>
<td>Agents' type</td>
<td>in-house/consultants</td>
<td>0.97</td>
<td>1443</td>
<td>0.331</td>
</tr>
</tbody>
</table>

Table 4.13 shows the categorical variables t-test results that the condemnation variable (condemnation and negotiation) p-level value is 0.000 < 0.05 indicating that there is a difference in the condemnation on the duration. The results also show the location type p-level value 0.002 < 0.05, indicating that there is a difference in the location (rural and urban) on the duration. However, the results show that agent type variable (in-house and Consultant) p-level value 0.331 > 0.05 indicating that there is insufficient evidence of difference between agents’ type on the duration.

4.7.2 Regression Analysis

Standard regression analysis is used to explain which factors among the independent variables (X) is related to the dependent variable (Y) and to examine these relationships. Linear relationships were assumed between variables and the residuals (predicted minus observed values) follow the normal distribution. However, the conceptual limitation of the regression techniques is that the relationship can only be determined but never be certain about the underlying sequence of events. Standard Regression is a statistical tool that finds subsets of predictor variables that most sufficiently predict responses on a
The regression mathematical model developed to predict the duration of new projects from known variables (X) is defined by the equation:

\[
Y = A + B_1 * X_1 + B_2 * X_2 + \ldots + B_n * X_n
\]  
(Eq. 4.1)

Where, the \( Y \) variable can be expressed in terms of a constant (A) and a slope (B) times the \( X \) variable. The constant is also referred to as the intercept, and the slope as the regression coefficient or B coefficient.

The standard regression method was used to determine if the independent variables significantly impacted the dependent variable (duration) to the 95% level of significance. The results of the standard multiple regression analysis that was used on the 34 completed projects is presented in Table 4.14.

The regression B coefficients in this equation represent the weight factor to independent contributions of each variable to the prediction of the dependent variable. Table 4.14 showed that the number of parcels, revisions and condemnation ratio were the only statistically significant variables. The analysis results indicated that projects with parcels acquired through condemnation impacted the acquisition duration to a 95 percent level of significance (\( p < 0.05 \)). It also showed that the acquisition duration was impacted by the number of parcels and number of revisions in the projects (\( p < 0.05 \)). Thus, in-house ratio and rural ratio (\( p > 0.05 \)) were not statistically significant to the 95 percent
probability level, which mean that these variables do not have a serious impact on acquisition duration. Additionally, the R² value is an indicator of how well the model fits the data. The R² of 0.72 indicates that 72% of the variability with the variables specified in the model has been explained.

Table 4.14 Standard regression summary

<table>
<thead>
<tr>
<th>Actual duration days/project</th>
<th>B</th>
<th>Std. Err.</th>
<th>t(28)</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>142.354</td>
<td>62.1486</td>
<td>2.29</td>
<td>0.029726</td>
</tr>
<tr>
<td>Parcels</td>
<td>0.37583</td>
<td>0.12004</td>
<td>3.13</td>
<td>0.004053</td>
</tr>
<tr>
<td>Revisions</td>
<td>0.413232</td>
<td>0.120609</td>
<td>3.43</td>
<td>0.001909</td>
</tr>
<tr>
<td>Condemnation ratio</td>
<td>0.426799</td>
<td>0.104073</td>
<td>180.0012</td>
<td>4.1</td>
</tr>
<tr>
<td>Rural Ratio</td>
<td>0.108441</td>
<td>0.107489</td>
<td>14.0891</td>
<td>13.9655</td>
</tr>
<tr>
<td>In-house Ratio</td>
<td>0.171993</td>
<td>0.110623</td>
<td>86.084</td>
<td>55.3679</td>
</tr>
</tbody>
</table>

ANOVA tests the joint effect of 2 or more independent variables on the dependent variable by comparing the variance between different samples and within each sample. The ANOVA goodness of fit results presented in table 4.15 above shows that at least one of the independent variables listed in the regression summary table contributed to the acquisition duration to the 95 percent level of significance (p<0.05).

Table 4.15 ANOVA overall goodness of fit summary

<table>
<thead>
<tr>
<th>Sums of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regress.</td>
<td>1370445</td>
<td>8.834414</td>
<td>0.00004</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>31025.2</td>
<td>868704</td>
<td>0.321683</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2239150</td>
<td>274089.1</td>
<td>4.1</td>
<td>0.00032</td>
</tr>
</tbody>
</table>
The mathematical model below was developed using the standard multiple regression method to find the factors among the independent variables that significantly contributed to the dependent variable. In table 4.14 the column labeled “B” represents those coefficients or parameters of the regression equation. Thus, the final regression mathematical model equation is as follow:

\[ Y = 142 + 2.26 \times \text{Parcels} + 3.28 \times \text{Revisions} + 738.18 \times \text{Condemnation Ratio} \]  

(Eq. 4.2)

Where,

- \( Y \) is the predicted acquisition duration in days
- \( \text{Parcels} \) is the number of parcels per project
- \( \text{Revision} \) is the total number of revisions of parcels per project
- \( \text{Condemnation Ratio} \) is the percentage of parcels acquired by condemnation per project

Additionally, the standard residuals of the data were plotted to visually check for correlation/bias and the normal probability plot of residuals was also checked and both results were normal.
4.7.3 Acquisition Duration Prediction Model Validation

One of the objectives of this research was to develop a regression mathematical model that could be used to predict the duration of a new project based on known variables. Subset B of the completed projects was used to validate the developed standard regression model (Eq. 4.2) to predict parcel duration as shown in figure 4.4. Comparison figures and plots are shown as duration in days/parcels for the ease of presentation and relative comparison only.

Figure 4.4 Actual versus predicted acquisition duration (days/parcel)
The plotted duration in figure 4.4 and 4.5, as expected, meet the norms and expectations of any acquisition agent. This model can be used in the prediction of acquisition duration for new projects and might be used effectively for planning purposes by the DOT’s.

Additionally, the prediction equation model validation with the subset B and subset A projects was used as a guide to measure the impact of the model factors on total prediction duration. The results of the model factors impacts are shown in table 4.16 and 4.17. Additionally, the model factors average impact on the total duration for the subset A projects agrees with the subset B projects that the majority of the total duration’s impact lies in administration including paperwork, title work, lack of current technology use, etc, as shown in Figures 4.6 and 4.7, respectively.
Table 4.16 Model factors impact on the projects prediction duration for the subset B projects

<table>
<thead>
<tr>
<th>Predicted total duration (days)</th>
<th>Constant</th>
<th>Condemnation</th>
<th>Parcels</th>
<th>Revisions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>325</td>
<td>44%</td>
<td>36%</td>
<td>15%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>587</td>
<td>24%</td>
<td>15%</td>
<td>33%</td>
<td>28%</td>
<td>100%</td>
</tr>
<tr>
<td>191</td>
<td>74%</td>
<td>0%</td>
<td>15%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>364</td>
<td>39%</td>
<td>14%</td>
<td>38%</td>
<td>9%</td>
<td>100%</td>
</tr>
<tr>
<td>582</td>
<td>24%</td>
<td>15%</td>
<td>33%</td>
<td>28%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.17 Model factors impact on the projects prediction duration for the subset A projects

<table>
<thead>
<tr>
<th>Predicted total duration (days)</th>
<th>Constant</th>
<th>Condemnation</th>
<th>Parcels</th>
<th>Revisions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>974</td>
<td>15%</td>
<td>4%</td>
<td>23%</td>
<td>59%</td>
<td>100%</td>
</tr>
<tr>
<td>663</td>
<td>21%</td>
<td>16%</td>
<td>19%</td>
<td>44%</td>
<td>100%</td>
</tr>
<tr>
<td>171</td>
<td>83%</td>
<td>0%</td>
<td>5%</td>
<td>12%</td>
<td>100%</td>
</tr>
<tr>
<td>198</td>
<td>72%</td>
<td>0%</td>
<td>22%</td>
<td>7%</td>
<td>100%</td>
</tr>
<tr>
<td>195</td>
<td>73%</td>
<td>0%</td>
<td>7%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>314</td>
<td>45%</td>
<td>39%</td>
<td>5%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>764</td>
<td>19%</td>
<td>10%</td>
<td>51%</td>
<td>21%</td>
<td>100%</td>
</tr>
<tr>
<td>624</td>
<td>23%</td>
<td>44%</td>
<td>9%</td>
<td>24%</td>
<td>100%</td>
</tr>
<tr>
<td>463</td>
<td>31%</td>
<td>28%</td>
<td>30%</td>
<td>12%</td>
<td>100%</td>
</tr>
<tr>
<td>351</td>
<td>40%</td>
<td>8%</td>
<td>18%</td>
<td>34%</td>
<td>100%</td>
</tr>
<tr>
<td>339</td>
<td>42%</td>
<td>0%</td>
<td>45%</td>
<td>14%</td>
<td>100%</td>
</tr>
<tr>
<td>260</td>
<td>55%</td>
<td>0%</td>
<td>39%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>730</td>
<td>19%</td>
<td>7%</td>
<td>51%</td>
<td>22%</td>
<td>100%</td>
</tr>
<tr>
<td>595</td>
<td>24%</td>
<td>39%</td>
<td>30%</td>
<td>7%</td>
<td>100%</td>
</tr>
<tr>
<td>358</td>
<td>40%</td>
<td>30%</td>
<td>25%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>408</td>
<td>35%</td>
<td>16%</td>
<td>41%</td>
<td>8%</td>
<td>100%</td>
</tr>
<tr>
<td>809</td>
<td>18%</td>
<td>68%</td>
<td>4%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>643</td>
<td>22%</td>
<td>9%</td>
<td>45%</td>
<td>24%</td>
<td>100%</td>
</tr>
<tr>
<td>162</td>
<td>87%</td>
<td>0%</td>
<td>13%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>437</td>
<td>32%</td>
<td>47%</td>
<td>17%</td>
<td>4%</td>
<td>100%</td>
</tr>
<tr>
<td>349</td>
<td>41%</td>
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The average impact of the model factors, constant, condemnation ratio, number of parcels and revisions on the projects duration are shown in figures 4.6 and 4.7, respectively.

**Figure 4.6** The average impact of the model factors on projects prediction duration for subset B projects

**Figure 4.7** The average impact of the model factors on projects prediction duration for subset A projects
4.8 Discussion of the Results

This section presents the findings for the 5 hypothesis that were used to examine the relationship between the independent and dependant variables on the acquisition process. The null hypothesis was also used to examine the effect of the number of parcels, number of condemnations (court cases), number of revisions (design change), parcel location (rural or urban) and agents (in-house and consultants) type on the ROW acquisition duration. The correlation and regression method was used to examine the impact of the number of parcels on the acquisition duration. The hypothesis test results indicated parcels are significant to impact the duration to the 95 percent level of significance. This conforms to the common belief among field agents, from a practical experience that the number of parcels does indeed contribute to the overall ROW acquisition duration. The higher the number of parcels the longer the project duration is to acquire all parcels. The results of the first hypothesis test in the regression indicated that the number of parcels did make a difference in the duration, therefore the null hypothesis was rejected and parcels were included in the regression model. The model factors impact on the prediction duration were also examined. It showed that 27% of the total duration was impacted by the number of parcels. Thus, reducing the number of parcels in the project can reduce the total acquisition duration as a possible solution.

The t-test was used on the second hypothesis to examine the categorical variable number of condemnation (condemnation versus negotiation) cases impact on the acquisition duration. The hypothesis test results indicated parcels
acquired through condemnation was highly significant to impact the duration to the 95 percent level of significance. Therefore, the null hypothesis was rejected indicating there is a difference in parcels acquired through condemnations on the duration. This was also consistent with the common belief among ROW administrators and managers and the literature review from other states that condemnation is one of the major factors that impacts the ROW acquisition duration. Literature review and discussion with neighboring states showed that some states have successfully used innovative methods to reduce the condemnation impact on the acquisition duration (5). In-house agents identified condemnation as the number one factor of the ROW acquisition delay. This factor was included in the regression prediction model of the acquisition duration for new projects. The impact of this factor in the model on the prediction duration was also examined. It showed that 16% of the total duration was impacted by condemnation. One possible solution to reduce the over 10% condemnation rate would be a systematic plan, such as arbitration, mediation or establishing an appeal process, and being transparent by providing a copy of the appraisal report to the property owner and would address parcels that are recommended for condemnation.

The regression method was used on the third hypothesis to examine the impact of the revisions (design change) on the duration. The hypothesis test results indicated revisions are also significant to impact the duration to the 95 percent level of significance and made a difference on the acquisition duration, therefore, the null hypothesis was rejected. According to interviews and literature
review, revisions can cause major delay to the letting of projects if not controlled early in the design process. Revisions are one of the factors that were identified by the ROW agents during the interview as one of the major factors that impacted the acquisition duration and cause delay to the projects. The research showed that most of the parcels were revised at least once if not more (Table 4.8). This factor was significant to impact the duration to the 95 percent level of significance and it was included in the regression prediction model. The impact of this factor in the model on the prediction duration was also examined. It showed that 16% of the total duration was impacted by revisions. Development of a systematic plan at the start of the design process, such as ROW staff involvement in the early design process and initiate meeting to address ROW issues prior to design completion. Also, creating a squad to address the revisions and establish a mechanism or technique to track revisions progress by the ROW agents would be a possible improvement to this delay factor.

The t-test was used on the fourth hypothesis to examine the impact of the parcel location (rural versus urban) effect on the duration. The hypothesis test results indicated that the parcel location made a difference to impact the duration to the 95 percent level of significance. Therefore, the null hypothesis was rejected. However, the standard regression determined that this variable was not significant enough to be included in the regression model. Literature review did not reveal much about this factor. However, the review of ROW acquisition indicated that most of the delay in the acquisition process was in the rural area where title issues were handled poorly and abstracts were not up to date at the
start of the acquisition process by title agents. Improved cross title training among acquisition agents, title update prior to the start of the acquisition process would be a possible solution to this delay as well.

The t-test used on the fifth hypothesis examined the effect of the acquisition categorical agent type (in-house versus consultants) on the acquisition duration. The hypothesis test results indicated that agents did not impact the duration to the 95 percent probability level and therefore, the null hypothesis was not rejected. The standard regression analysis also indicated that this factor was not significant impact the duration to the 95 percent probability level to be included in the model. This is contrary to the common perception among agencies and among agents that consultants can make a difference on the acquisition duration.

The standard regression included the variables, parcels, revisions and condemnation ratio that were statistically significant in the model. The $R^2$ of the models indicated that 72% of the variation in the dependent variables can be explained by the independent variables and also a 72% indication that the model fits the data. The standard regression model is simple and might be used by any transportation agency. Therefore, it was selected as the final model to predict the acquisition duration of new projects.

Additionally, the model factors impact on the prediction duration showed that there will always be a constant number of days (41%), regardless of all other variables in the model, that are contributed to by the administration work and acquisition management process, such as paper work, no information technology
tools, answer questions and concerns, meetings, etc. that impact the total duration. This issue was also expressed by the field agents during the interviews.

While there are a host of reasons why the property acquisition process gets delayed, one of the more challenging reasons stems from public information that is not made public. A lack of transparency or disclosure occurs when critical public information is not readily available. Collecting sales data and gathering research is a critical function in the appraisal process. So when sales information is not publicly accessible, the entire acquisition process is delayed. Such is the case in non-disclosure states.

In Mississippi, the acquisition process was reviewed to determine whether greater transparency might decrease delays. Having non-disclosure status means that the sales price is not disclosed in the deed and not recorded as part of the public record. The lack of price disclosure carries substantial implications for the appraisers hired by the DOT right of way division to perform market value appraisals. Under Federal regulations of the Uniform Act, an appraiser is required to personally confirm details of real estate transactions (comparable sales) with all parties involved in the transaction (seller, buyer, attorney and broker). The standard process requires the appraiser to collect deeds in the local courthouses and then contact the buyer or seller and request information on the transaction, such as sales price, condition of the property and time it took to sell. This has always been a time-consuming process, and the non-disclosure rules that necessitate this only serve to create more obstacles.
Another way to increase transparency involves providing the property owner with a copy of the appraisal report. Currently, property owners are presented the Fair Market Value Offer (FMVO) by the acquisition agents. The agent verbally explains the figures in the FMVO based on the appraisal report, but without the actual copy of the appraisal report, property owners are required to complete their own appraisal at their own expense or “take on faith” that the FMVO presented by the agent is fair. It becomes easy to understand why a property owner would have a suspicious reaction, especially if they think, “they must be hiding something, that’s why they are not showing me the report.” Uncertainty is certain to follow when an offer is made in this manner.

Results of decreased condemnations cases in states going from non-disclosure to disclosure status support the benefit of disclosure law change as shown in (Table 3.1). Arkansas, ROW acquisition practices showed a 15% reduction in condemnation cases due to the transparency issue by disclosure status law change in 2006. The 3 years average number of condemnation cases before and after the change in the law went down from 168 to 143 respectfully. Also, providing the property owner with a copy of the appraisal report (transparent) has helped in reducing some condemnation cases in that state. Information provided to property owners at the beginning of the acquisition process enabled them to make an informed decision about their property that helped reduce acquisition duration.

In another disclosure status state, Tennessee, ROW acquisition practices showed a 25% reduction in condemnation cases due to the transparency issue
by disclosure status law change in 2000. The 3 years average number of condemnation cases before and after the change in the law went down from 255 to 192 respectively. Also, providing the property owner with a copy of the appraisal report (transparent) was not perceived by the ROW administrator to have helped reduce condemnation cases in that state, but information provided to property owners on the front end enabled them to make an informed decision about their property.

Louisiana has been a disclosure status state for a long time. However, recent civil law change to allow the property owner to obtain a copy of the appraisal report to promote transparency has, according to the LADOTD ROW Administrator, shown a 5% increase in the amicable negotiation and a decrease in the condemnation cases. Thus, transparency has contributed to the reduction of ROW acquisition duration and enhanced communications between all parties involved in the acquisition process.

4.9 Developed Processes

Based on data analysis and the interviews conducted of the 5 years completed projects to address the factors that impacted the acquisition duration process, the following were developed to be used by DOT’s:

1. A mathematical multiple regression model that predicts parcel duration of new projects. It is based on statistical analysis that determines significant variables affecting the duration of the projects from prior completed projects to enhance the new project duration prediction. Practically, the duration prediction model can be useful to the ROW division at DOT in the
new projects planning phases and reallocation of resource. Further it can provide confidence intervals on the project duration prediction. The ROW division acquisition duration estimation process is based on past experience and old projects’ comparison which could be misleading and not an accurate prediction. This process can be incorporated into planning software and used by any DOT or transportation agency.

The developed model is listed as shown by Eq. 4.2 on page 79.

2. **Process for creating agreement form.** This form lists the specific issues and concerns that prevent the property owners from accepting the FMVO. Upon addressing the property owner’s concerns the property owner would agree to convey the parcel to DOT. This new form would help bring communication and transparency to the ROW acquisition process and would reduce recommendations for condemnations to reduce acquisition duration. This process was tested on a project with 32 parcels where 22 (69%) parcels were acquired through initial negotiation and 10 (31%) parcels were entered into further negotiation and had the options to be recommended for condemnation. The form was presented to all property owners that had refused to accept the FMVO. Three weeks later 9 parcels were acquired with the help of this new process and only one parcel was condemned. This form has helped reduce the acquisition duration and prevented 28% parcels from being recommended for condemnation procedure.
Department of Transportation
Right Of Way Division

ROW Acquisition Agreement Form

Project Number: ___________________________ Date: ___________________________

Parcel/File Number ___________________________

County: ___________________________________

I would like to have an answer to the specific issue I am describing on the form below regarding the Department of Transportation interest in the acquisition of my property for transportation projects. Issue supporting materials will be provided as needed.

Upon receiving the proper response to my listed issues, my prompt decision about conveying the parcel of land to the Department of Transportation for transportation projects will follow.

The specific issue that I need an answer to is with:

☐ Appraisal Issues

☐ Acquisition/Relocation Issues

☐ Utility/Permit Issues

Figure 4.8  ROW acquisition agreement form
Figure 4.8 (Cont.)
3. **Developed Electronic Acquisition Process (EAP) that utilizes technology tools to reduce duration and cost that will replace the old system of hand delivery of hard copies of maps and other acquisition instruments.** This process will also eliminate the need for review staff and field agents from traveling to the main office to pick up the reports hard copies. Based on the initial testing of this process and the agents and consultants feedbacks, the process reduced the ROW acquisition duration by 15%.
Figure 4.9  Electronic acquisition process
Figure 4.9 (Cont.)
Below are the steps that need to be followed to use in the Electronic Acquisition Process (EAP) in the Right of Way Division.

**Step 1**
When Survey Maps & Deeds (SM&D) Section staff complete a project or revisions a copy of all completed documents be placed into the appropriate folder on the project file server, using a file naming convention that does not exceed 50 characters.

**Step 2**
The SM&D staff will send an e-mail notification to all section heads providing information that revised project documents are on the project file server.
- **Section Heads:** Appraisal, Acquisition, Relocation, Clearance, District, Property Management.

**Step 3**
The Appraisal Section Supervisor will notify their assigned Appraiser about the project documents availability on the project file server to be downloaded through a Virtual Private Network (VPN) connection using their electronic computer device.
  a) Appraiser downloads the files from the project server to her/his laptop to start the appraisal process.

**Step 4**
The Appraiser will prepare an appraisal report based on Fair Market Value (FMV) with the suggested just compensation for each parcel. The appraisal report will be electronically signed by the Appraiser using an Adobe Professional signature stamp or other available software, and upload a copy of the appraisal report on the project file server under appropriate folder.

**Step 5**
If the appraisal report requires any revision, the Appraiser will apply these revision to the report and when finished will upload the revised report back on the project file server with a “Revision Needed Flag Status” with an e-mail notification will be send to the SM&D Section Staff for immediate action.

**Step 6**
Once the SM&D Squad staff had made necessary revisions to project design files and parcel information, they will upload the revised documents back on the project file server with a “Revised Flag status”. The SM&D Squad Staff will send an e-mail notification to the Appraiser about the completion of revisions.

**Step 7**
The Appraisers will notify the Review Appraiser about completion of project documents for their review with delivery confirmation request from the Review Agent.

Figure 4.9 (Cont.)
Step 8
The Review Agent will download project documents from the project file server to check for compliance with appraisal standards, regulations and laws applying any corrections, clarifications if necessary. Once the Review agent had finished checking the report and making corrections, they will place the reviewed report back on the project file server with a “Reviewed Flag status”. The Review Agent will notify the Appraiser of correction applied.

Step 9
The Appraiser will download reviewed project documents and make any modification necessary. Upon approving an appraisal report, the Review Appraiser place the appraisal report back on the project file server with a “Final Appraisal Report Flag status”. The Staff Review Appraiser will notify section heads about the report availability.
- **Section Heads:** Appraisal, Acquisition, Relocation, Clearance, District, Property Management.

Step 10
The Acquisition Section Supervisor/Manager notifies the assigned Agent to the project of the project documents availability on the project file server.

Step 11
The Acquisition Agent will download, through a virtual private network (VPN) connection, the appraisal report from the project file server using their electronic computer device.

Step 12
The Acquisition Agent will print the appraisal report page along with the Fair Market Value Offer (FMVO) to be presented to the property owner. This marks the start of the acquisition negotiation process.

Step 13
Other section’s agents will have immediate access to the appraisal report on the project file server for review and download as needed without having to wait on a hard copy of the original appraisal report.

Step 14
After all project documents have been finalized, a copy will be available on the project file server with a “Acquired Flag status”. A hard copy of the final acquisition can be printed to be placed in the Right of Way file room.

Step 15
Consultants needing access to project documents will receive assistance from an I.T Staff who will upload documents to the Right of Way FTP Site for consultants to download.
A Systems Administrator will create a folder arrangement on the project file server that will allow right of way employees access to project documents pertaining properly information.

**Administrator Note:** The project file server will only allow users to add or copy files; users will not be able to edit or delete files on the project file server. Users will have to copy project documents to their computer and apply any changes to the documents and afterwards, upload the revised documents back onto the project file server.

As routine, each section will carry out duties necessary to complete a project workflow, and upload copies of their files to the project file server inside the correct District = County = FMS folder for others to access, followed by an email notification to necessary individuals.

**Project File Server Setup**

![Diagram of project file server setup](image)
CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Acquiring ROW for transportation projects can be costly and time consuming. ROW administrators and managers are constantly looking for ways to reduce the duration and save money. The purpose of this research was to identify the factors that impacted the ROW acquisition duration for the MDOT ROW division and to propose a recommended process to reduce the overall acquisition duration. Factors that contribute to the delay in the ROW division that acquisition agent’s face are condemnation, no. of parcels and revisions as supported by the analysis of the large dataset of historical acquisitions by ROW.

Review of the literature and current process used by ROW, multiple interviews of field agents and managers in neighboring states found that the ROW administrators and managers are faced with many challenges to find ways that would help in reducing the acquisition duration. Lack of good communications among all parties involved in the design process is a major challenge that administrators and managers are faced with on a continuous bases. Training inexperienced agents is a challenge to appraisal section staff. Gathering good sale information, in the rural area, is one of the important and challenging steps to produce good and accurate appraisal reports. The use of information
technology resources is not utilized to the fullest extent due to lack of equipment and proper training. It can contribute to the delay in the exchange of needed information between field agents and the design office.

Best practices and innovative tools to reduce condemnation and revision cases practiced by neighboring states such as arbitration, mediation, appeal process committee, waiver valuation, design management joint committee, and empowering field agent’s to make decisions on the field were not utilized to enhance the acquisition process and reduce overall acquisition duration.

A model was developed and tested with the statistically significant variables to predict the acquisition duration for new projects. This model can be used as an effective tool for planning and better management of resources for new projects. Additionally, the factors in the model were used to develop new processes, such as the ROW agreement form and the electronic acquisition process that will reduce duration further and enhance the ROW acquisition management process.

5.2 Conclusion

The objectives and findings of this research study were achieved through literature review, multiple interviews of the ROW agents, other neighboring states' acquisition practices and statistical analysis to determine the significant variables that impacted the duration of the projects from prior completed projects. The ROW projects acquisition duration was increased by the following factors:
1. Condemnation Cases
   o Descriptive analysis shows that approximately 11% of parcels were acquired through condemnations while 89% through negotiation.
   o The average time to acquire projects where condemnation is involved was 654 days and 231 days through negotiation. Reducing condemnation cases will reduce acquisition duration.
   o Evaluation of the factors in the developed model shows that 16% of the predicted duration was impacted by condemnation cases.
   o No techniques such as, arbitration, mediation or appeal process section or committee, were used in the ROW division to take another look at the parcel with unsuccessful acquisition. This research shows that some of the neighboring states have successfully used such technique to reduce condemnation cases.
   o Transparency is not permitted in the acquisition process to show the property owner how in-house appraiser staff arrived at the current FMV. Neighboring states that are disclosure status states showed a reduction in condemnation cases due to transparency as shown in Table 3.1.

2. No. of Parcels
   o For this research, 1478 parcels in 35 projects were randomly selected for statistical analysis. An average of 42 parcels per project was noted.
Evaluation of range of parcels per projects shows that 40% (14 projects) of the projects had 20 or fewer parcels and 60% (21 projects) had 20 or more parcels.

Evaluation of parcel’s location shows that 65% of total acquired parcels were in the rural area. Title work in the rural area, such as multiple or deceased owners is contributing to acquisition delay.

Of the parcels from competed projects acquired in less than 30 days, 60% were acquired by in-house and 40% were acquired by consultants. This contradicts the notion that consultants complete projects faster than in-house.

Evaluation of the factors in the developed model shows that 27% of the predicted duration was impacted by this factor.

Agents assigned to the project did not receive a complete package at the start of the project.

Parcels with potential problems were not identified and addressed early at the start of the acquisition process to reduce delay.

Information technology tools were not utilized to share information among agents.

3. Revisions (design change)

This research identified 772 revisions in the 35 completed projects. An average of 22 revisions per project was noted.

Plan revisions, such as parcels size, name change, added parcels, and appraisal change were not addressed immediately.
- ROW personnel were not involved in the early design process that led to discovery of problems by the ROW staff causing the original plan to be revised. This contributed to acquisition delay.
- Evaluation of the factors in the developed model shows that 16% of the predicted duration was impacted by revisions.
- Information technology tools between ROW sections and other divisions, such as network, File Transfer Protocol (FTP) and intranet, to access needed information were not utilized to limit the impact of revisions on acquisition duration. An Electronic Acquisition Process (EAP) was developed.

5.3 Recommended Actions to Reduce Duration

The following recommended actions, based on literature review, multiple interviews and statistical analysis of historical completed projects were found to further reduce the overall ROW acquisition duration:

5.3 1 Recommended Actions to be taken by DOT's

1. Use the newly developed acquisition prediction model for planning and better management of resources for new projects. This model can be added to the highway projects planning software.

2. Use the newly developed ROW agreement form process. This form will list the issues that prevent a property owner from accepting the Fair Market Value Offer (FMVO) and address them effectively in a timely manner to prevent parcels recommended for condemnation.
3. Use the newly developed Electronic Acquisition Process (EAP) to enhance the acquisition management process by reducing the paperwork and promote sharing of information between all parties involved in the ROW acquisition.

5.3.2 Recommended Actions to Reduce Condemnation Cases

1. The ROW division must be transparent in dealing with the public to build trust between property owners and the agency staff. This can be achieved by:
   - Providing the property owner with a copy of the appraisal report to show the owner how the agent arrived at the FMV listed in the report, and
   - Providing an approved list of selected professional licensed appraisers in Mississippi to the owner for his own examination of the appraisal report.

2. An incentive program to encourage early ROW acquisition should be initiated. This saves time by eliminating the need for a final FMVO in some instances to get approval from superiors. Agents should be empowered to offer up to a 5-10% incentive to be used for early signature of the deed, avoiding condemnation.

3. Authorize the ROW acquisition agents to use the administrative adjustment more frequently as justified. This will reduce the number of condemnation cases.
4. Use the mediation process by hiring an outside lawyer, from an approved list of law firms, to meet with the property owner who is refusing to convey his property to DOT to find a middle ground in order to avoid sending the parcel to court for trial.

5. Create a committee from within or outside ROW division to examine all parcels’ that are recommended for condemnation to find a just solution. The final outcome decision must be binding for both parties.

6. Establish an administrative appeals section, comprised of 2 or 3 ROW officers to examine all parcels’ that are recommended for condemnation to identify the problems that are preventing the property owners from accepting the FMVO and finding a solution to avoid going to court. Personality conflict can sometimes create a conflict.

5.3.3 Recommended Actions to Reduce Number of Revisions

1. Designated staff member should attend all Preliminary Survey and Engineering (PS&E) meetings to identify plan revisions earlier in the design process to avoid any possible revisions in the middle of the acquisition process. This staff should do the following:
   
   o Be available to identify and address ROW questions and issues early in the projects’ development process.
   
   o At the 70% design completion process initiate a meeting to discuss the progress of the design process and head off revisions’ problems after design completion.
o Request a log of all revisions to be sent to a designated person in the SM&D section to complete all revisions within 5 days depending on the complexity of the revisions type

2. ROW must provide technology tools, wireless data cards, blackberries, laptops with larger screens, for all ROW field agents to have access to DOT network resources at all time.

3. Approve the use of a digital electronic signature for the DOT agents to reduce the use of paper printed for actual signature and to save time and cost.

4. ROW agents’ cross training must be provided and implemented to enhance the acquisition process by:
   o Initiating a “one agent call” pilot program on small projects to reduce the overuse of resources and test its effectiveness to appraise/acquire parcels under $10,000.00.
   o Training acquisition agents on how titles are obtained to solve minor problems encountered in the field and to reduce the waiting period on needed information.

5. DOT should provide ROW agents with extra training to maintain their license status and promote professionalism and transparency.

5.3.4 Recommended Action to Change the State Law

1. Request the legislature to consider changing the state law from a non-disclosure status to a disclosure status. This change will allow;
o DOT agent’s to access needed sale information from the courthouses around the projects’ area faster and with greater accuracy and save 50% of the appraisal process time.

o Appraisers can compile the sale brochure faster and would help agents to understand what influences the sale better.

o ROW appraisal agents to verify sales information faster and promote transparency.

o Help county tax commission to collect property taxes accurately.

2. DOT becomes a member of the MLS service would serve as a good starting point in the appraisal process. This will help enhance the information sharing process between MDOT staff and the local real estate agents.

5.4 Recommendations for Future Research

The following recommendations can be used for future research into the acquisition process:

1. Additional research is needed to identify and standardize issues related to Eminent Domain procedure and practices associated with the acquisition process.

2. Research into the use of comprehensive software that contains all aspects of the ROW acquisition process and centralize the process with network connections to a main frame database.
REFERENCES


5. Acquisition Tips and Strategies” Larry Stevens, SR/WA January/February 2002

6. Right of way acquisition and property condemnation: a comparison of US states law 2006, by Shaki Hakimi


9. Right of Way Division Citizens Acquisition Guide (MDOT)


17. Andrew Gelman “Data analysis using regression and multi level models”

APPENDIX A.

RECOMMENDATION FOR CONDEMNATION FORM ROW683
ROW-683

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
RECOMMENDATION FOR CONDEMNATION

File No. ____________________________
Project No. ____________________________
County ____________________________
Date ____________________________

OWNER(S) ____________________________

1. Are taxes paid? ___________ If not, amount due ____________________________
2. Are there utilities on premises? ____________________________
3. If so, name owner: ____________________________
4. Is property occupied? ___________ By Owner or tenant? ____________________________

Your final offer: ____________________________
Their final offer: ____________________________

Remarks: ____________________________

I hereby recommend condemnation: ____________________________

Right of Way Agent ____________________________

I concur in this recommendation on this the ___________ day of ___________, A.D., 2004 ____________________________

Right of Way Acquisition Supervisor ____________________________

I concur in “final offer”, this the ___________ day of ___________, A.D., 2004 ____________________________

Property Acquisition Manager ____________________________
APPENDIX B

ACQUISITION AGENT CONTACT REPORT ROW-520
APPENDIX C
FAIR MARKET VALUE OFFER FORM ROW205
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

FAIR MARKET VALUE OFFER

DATE: ________________________________

NAME: ______________________________ PROJECT: ______________________________

ADDRESS: __________________________ COUNTY: _____________________________

ROW PARCEL(S): ______________________________

It is necessary that the Mississippi Transportation Commission acquire from you certain property necessary for the construction of this project. The identification of the real property and the particular interests being acquired are indicated on the attached instrument.

The value of the real property interests being acquired is based on the fair market value of the property and is not less than the approved appraisal value. Value determination disregarding any decrease or increase in the fair market value caused by the project. This fair market value offer includes all damages and is based on our approved appraisal value determination in the amount of $ _________________________.

☐ Appraisal. ☐ Value Determination. This Value Determination was made based upon recent market data in this area.

This acquisition does not include oil, gas, or mineral rights but includes all other interests.

Unless noted otherwise, this acquisition does not include any items which are considered personal property under Mississippi State Law. Examples of such items are household and office furniture and appliances, machinery, business and farm inventory, etc.

The real property improvements being acquired are ______________________________

The following real property and improvements are being acquired but not owned by you ______________________________

Separately held interest(s) in the real property are valued at $ _________________. These interests are not included in the above fair market value offer.

Land Value: ______________________________ $ ______________________________

Improvements: ___________________________ $ ______________________________

Damages: _______________________________ $ ______________________________

Total Fair Market Value Offer $ ______________________________

NOTE: All interests must be acquired by MDOT before any payment will be made.

Right of Way Acquisition Agent: ______________________________

Mississippi Department of Transportation
APPENDIX D

40 COMPLETED SELECTED PROJECTS FOR ANALYSIS
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APPENDIX F

5 COMPLETED PROJECTS FOR REGRESSION MODEL VALIDATION
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APPENDIX G.

PARTIAL RELEASE OF MORTGAGE FORM ROW695
ROW695
TRUSTEE:

Do not record above this line.

PARTIAL RELEASE OF MORTGAGE

FOR VALUE RECEIVED, the undersigned hereby releases from the lien of that certain deed of trust dated , executed by , in favor of , which said instrument is of record in the office of the Clerk of the Chancery Court of County, Mississippi, at , in Book No. , at Page(s) , Instrument No. of the Records of Mortgages and Deeds of Trust on Land, the following described lands on Project No. .

The purpose of this instrument being to empower the owner of the legal title to said property to sell, convey and warrant to the Mississippi Transportation Commission of Mississippi, a body corporate by statute, fee simple title for right of way purposes.

Witness the signature of the mortgagee this the _____ day of, __________ A.D., 20_____

BY:______________________________

Instrument prepared by and return to:
Miss. Department of Transportation
Right of Way Division
P. O. Box 1850
Jackson, Mississippi 39215-1850
Phone: 601-359-7559
Account No.