Highlighting Code:

Yellow DEQ deleted the item from the final report.

Blue DEQ added the item.

Green indicates an editorial comment.

EXECUTIVE SUMMARY

Page 3

The study revealed that the sophistication of MDEQ wetland permits varies greatly throughout the state and that most permits fail to contain necessary mitigation specific conditions. The study also revealed the following facts: 1) 1 of every 7 mitigation projects (14%) is never constructed

Page 4

The study also revealed that MDEQ staff is unable to conduct adequate follow-up on mitigation projects after permit issuance.

Fifty seven of the 77 projects studied (74%), received no follow-up action of any kind after permit issuance.

Many factors have contributed to the overall poor quality of the MDEQ's wetland mitigation program. The historic lack of accurate record keeping or data on mitigation projects has prevented the MDEQ from knowing the scope of the problem. The MDEQ's preference for requiring on-site mitigation has lead to many mitigation projects being constructed in locations not suitable for wetland creation. The MDEQ's routine practice of issuing wetland permits prior to having a complete mitigation plan,conservation easement, or other pertinent information has resulted in large numbers of permit violations and poor quality wetlands. Poorly written or incomplete permits and a lack of enforcement staff have made enforcement difficult. Heavy permit workloads prevent MDEQ staff from routinely monitoring most mitigation projects and requiring the corrections or modifications needed to improve the quality of mitigation wetlands. This lack of follow up has been a significant factor in the poor quality of mitigation wetlands in Michigan.

DEQ added a sentence at the end of the above paragraph that stated " In addition, below average precipitation during the study period may have contributed to fewer successful mitigation projects." Precipitation data was not examined during the study.

DEQ added an entire paragraph to page 4 that started "The MDEQ has taken many steps to improve wetland mitigation since this study was initiated in 1997….." Some of this addition is accurate, but some grossly over estimates the effectiveness or improvements.

To improve the MDEQ's wetland mitigation program, the MDEQ should develop and implement a mitigation tracking system. All permitting staff should be directed to use the system and to enter mitigation related data at the time of permit issuance. This system should be designed to

notify staff when monitoring reports are due and when site inspections are necessary. The MDEQ should require that mitigation wetlands be located in areas where they are more likely to be successfully created and to be biologically beneficial. This would encourage and result in more off-site mitigation. The MDEQ should update their standard mitigation permit conditions and require permitting staff to include these conditions on all wetland permits requiring mitigation. MDEQ staff should withhold the issuance of a wetland permit until such time that they have received, reviewed, and approved all necessary mitigation related information, including a complete mitigation plan, conservation easement, and financial assurances. Staff of the MDEQ must conduct routine and timely inspections of mitigation projects and require corrections or modifications as needed. Staff of the MDEQ must also take timely enforcement actions against permittees that fail to construct the required mitigation or comply with permit conditions.

To improve the quality of mitigation wetlands, the MDEQ should encourage and require, whenever possible, the restoration of historically lost wetlands instead of allowing the creation of wetlands from upland areas where they are less likely to succeed. The MDEQ should also consider allowing applicants the option of creating emergent wetlands (at a higher ratio) as compensation for scrub-shrub and forested wetlands. The MDEQ should require prior to permit issuance, that sufficient hydrological information be provided that clearly demonstrates that a proposed mitigation site can be converted into the desired wetland type. The MDEQ should require that all mitigation projects incorporate a stop-log or similar water control structure so that water levels can be easily adjusted if necessary. The MDEQ should also establish compliance and enforcement staff positions within the LWMD in order to insure that permittees provide the required replacement wetlands. In addition to the above-referenced recommendations, the MDEQ should strongly encourage and promote wetland mitigation banking. Wetland mitigation banking is desirable because the mitigation wetlands are constructed, monitored, and certified prior to being available for use by the permit applicants.

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I. INTRODUCTION

A. Purpose

This study was developed by the Land and Water Management Division (LWMD) of the Michigan Department of Environmental Quality (MDEQ) under a grant from the U.S. Environmental Protection Agency (USEPA). The primary purpose for this study was to evaluate wetland mitigation projects authorized by the MDEQ in order to identify wetland designs and construction methods that consistently resulted in the creation of high quality "functioning" mitigation wetlands. The primary goal of this study was to improve the quality of mitigation wetlands constructed as part of the MDEQ's wetland regulatory program. Secondary goals were to compile as much historic information on past mitigation projects as reasonably possible, to establish and implement a mitigation tracking system, and to conduct a comprehensive review and evaluation of the MDEQ's wetland mitigation program

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Wetland "mitigation" as practiced in Michigan, generally means creating a replacement wetland in an upland area that is not, and historically has never been wetlands. Wetland "restoration" generally means restoring hydrology and wetland vegetation to historic wetlands that have been drained, usually for agriculture. Wetland restoration has been used as mitigation only in situations where the impacts to the historic wetland were so extensive that the area no longer

could be legally defined as wetland. Wetland "enhancement" typically involves altering an existing wetlands hydrology or plant community (usually by adding water). Wetland enhancement does not qualify as mitigation in Michigan. Preservation of existing wetlands through the use of conservation easements, or donations of wetland property to the State of Michigan do not qualify as mitigation. However, while enhancement and preservation are not considered to be suitable mitigation on their own, they are often a component of a final mitigation plan.

Applicants and MDEQ regulatory staff have had limited options in the siting of mitigation projects. R 281.925 Rule 5(5) states in part:

If the department determines that it is practical to replace the wetland resource values that will be unavoidably impacted, the department shall consider all of the following criteria when reviewing an applicant's mitigation proposal:

(a) Mitigation shall be provided on-site where practical and beneficial to the wetland resources.
(b) When subdivision (a) of this subrule does not apply, mitigation shall be provided in the immediate vicinity of the permitted activity where practical and beneficial to the wetland resources. When possible, this means within the same watershed and municipality as the location of the proposed project.
(c) Only when it has been determined that subdivisions (a) and (b) of this subrule are inappropriate and impractical shall mitigation be considered elsewhere.

Due to the requirement of Rule 5(a), the MDEQ has normally required wetland mitigation on the site where the loss occurred. In those cases where it was not practical and beneficial, Rule 5(b)'s restriction to the same watershed and municipality often offers limited additional quality opportunities for wetland mitigation. Rule 5 has facilitated the practice of siting mitigation wetlands wherever there were available uplands on the project site (i.e. areas not being proposed for development). Rule 5 has also severely limited the opportunities to incorporate wetland restoration concepts to address mitigation requirements.

There are two types of permits issued under Part 303. First, General Permits (GPs) are issued for projects expected to have only minor impacts on wetlands. These projects are reviewed through an expedited permit application process.

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These projects are not public noticed and the MDEQ is prohibited from requiring wetland mitigation (See R 281.925 Rule 5[9]). Second, Individual Permits (IPs) are issued for projects whose wetland impacts are larger and more complex than GPs. These projects must be public noticed and may also involve a public hearing. Wetland mitigation is generally required for impacts authorized by IPs.

Since the MDEQ is prohibited from requiring wetland mitigation for losses associated with GP projects, all projects investigated and evaluated during this study were Ips.

C. Scope of Study

While this study originally had one primary purpose, that being to identify wetland designs and construction methods that consistently resulted in the creation of high quality "functioning" wetlands, ultimately a comprehensive review and evaluation of the MDEQ's wetland mitigation program was conducted. General information such as size of the wetland impacts, mitigation ratio, and whether the mitigation was constructed on-site or off-site was recorded for each project. Each permit document was reviewed to determine which specific mitigation conditions they contained. Each individual mitigation site was inspected and evaluated. Each project was rated from a "legal," "biological," and overall perspective. Finally, information was collected and compiled regarding MDEQ's "follow-up" evaluation of each mitigation project.

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In the fall of 1997, 24 MDEQ files were reviewed, the permits evaluated, and their associated mitigation sites inspected. In the summer of 1999, an additional 54 permits and their associated mitigation sites were reviewed and inspected. The 78 permits evaluated were applied for between 1987 and 1998. An attempt was made to evaluate a cross-section of mitigation projects spanning the earliest years of Michigan's program to the present. The concept of mitigation and the practice of requiring replacement wetlands as permit conditions, did not become common practice until the late 1980s. In subsequent years, as Michigan's economy prospered and the volume of permit applications to impact wetlands soared, mitigation became a common component of wetland permit conditions.

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The most significant problem with the new rules is that they place considerable additional burdens and responsibilities on an already over worked permitting staff. The new rules mandate that permitting staff require wetland mitigation for more projects than in the past. Staff must now develop criteria for project specific performance standards to be included on every permit. Staff must also now obtain conservation easements and financial assurances for all mitigation projects in addition to obtaining and evaluating more detailed information regarding the design and physical construction of the wetland. Realistically, staff will now be required to spend considerably more time reviewing each permit application in which wetland impacts can be authorized.

The MDEQ must recognize and address the fact that simply establishing new and improved mitigation rules will not result in significant program improvement. Given the current heavy workloads, with the emphasis on issuing permits as expeditiously as possible, mitigation improvements will be minimal at best. Permitting staff simply does

not have the luxury of spending the amount of time needed to comply with the new mitigation rules.

The promulgation of new rules is a significant step in improving MDEQ's wetland mitigation program. The MDEQ must now follow that up by allocating the staff needed to implement them. Without staff to adequately implement the new rules, the mitigation program will look better "on paper" but in reality will not result in substantive improvements.

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II. METHODS

A. Compilation of Mitigation Data

At the time this study was initiated, there was no centralized system in place to record mitigation data or track permits that required mitigation. Each of the LWMD's 13 District offices either kept their own records, or kept no records at all. In most offices the records were sketchy, incomplete or non-existent.

The first major obstacle to overcome before the study could begin was to construct or reconstruct the mitigation requirement data for each of the 13 District offices. In early 1997, a request was made to each LWMD district supervisor to compile a list of "all" permits issued that required mitigation between October 1980 through December 31, 1996. Staff was asked to review any and all information sources at their disposal. Suggested sources included personal memory or employee journals, district mitigation log (if one existed), CIWPIS[1] computer lists, permit documents still existing within the CIWPIS system, miscellaneous mitigation monitoring reports, and their annual 404 reports[2].

The district supervisors were asked to prepare a list of all permits found to have required mitigation. For each permit the following information was requested:

1. file number
2. permittee's name
3. county
4. acreage of wetland lost
5. acreage of mitigation required
6. location of the file and monitoring reports (if they existed)

District staff was able to provide data on 571 permits that had required wetland mitigation (See Appendix B). However, due to a lack of centralized record keeping and considerable staff turnover over this 16-year period, the information provided by the districts should not be considered totally complete or entirely accurate. Even the

[1] Coastal and Inland Waters Permit Information System is the LWMD's computer permit application database.
[2] 404 report is an annual report submitted to USEPA documenting all "fills" greater than 1 acre in size.

information provided on known mitigation projects was incomplete on many projects due to the fact that files are maintained by the district offices for only three years. After that time, they are sent to a storage facility in Lansing (i.e., records center). The 571 permits identified by staff most likely significantly under estimate the total number of permits issued that required mitigation. Compiling

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After completion of the in-office review, an on-site inspection was conducted to evaluate the mitigation site(s). For the purposes of this study, a "site" consists of an individual wetland mitigation basin or area. Many projects had multiple mitigation sites. Site inspections were conducted from August through October of 1997 and between June and September of 1999. In 1997, 24 projects were evaluated and 54 in 1999.

DEQ added the following sentence "Site inspections were conducted during a period of below average precipitation in Michigan, which could have affected the results." Precipitation data was not evaluated during the study.

All 78 mitigation projects and the associated 159 mitigation sites were inspected by the author.

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III. RESULTS

A. General Information

This study provided the opportunity to compile general information on past mitigation projects that can be used in identifying problem areas and to make program improvements. Information was compiled for the following categories: project type, project location (i.e. county), acreage of wetland impacts, mitigation ratios used, mitigation acreage required, whether the mitigation was constructed "on-site" or "off-site" and the age of the mitigation site at the time of evaluation. Specific information and final ratings for each of the 78 selected projects along with representative photographs of the mitigation project can be found in Appendix G. Final results for all 78 projects are summarized in Table 2. The results for each category are summarized below.

1. Project Type

Seventeen different types of projects were represented in the 78 permits that were evaluated. Residential development was the most prevalent type of project representing 17 permits, or 22% of the projects followed by industrial development with 15 projects (19%), commercial development with 14 projects (18%), golf course development with 8 projects (10%), road construction with 5 projects (6%). These five categories represent 75% of the projects. Three permits involved landfill construction, while residential/golf course combination, mining, water treatment facilities, airport expansions, and campground construction each involved two permits. Six other project types involved one permit. See Figure 5 for the breakdown of project types.

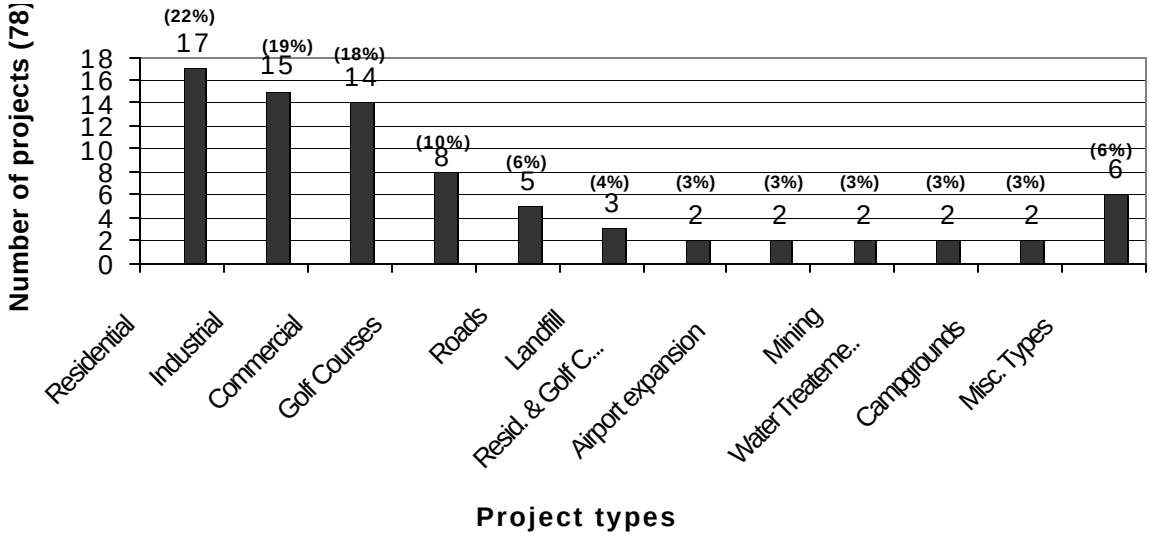

Figure 5: Project Types

Figure 5 was eliminated

Page 29 & 30

Table 2:

Mitigation Site Review Summary Form

Permit Number	78 Projects
Project/Applicant Name	
Project Type (Golf Course, Commercial Bldg., etc.)	See figure 5
County	See table 3
Acreage of Impact	267.87 acres (total)
Ratio	1.82 average, see figure 7
Mitigation Acreage Required	488.4 acres
On or off-site	58 on site, 17 off site, 2 both
Age of Mitigation Site	3.16 years Ave. See figure 10

Special Conditions	Required?	Compliance?
Mitigation acreage	57 (75%)	35 (63%)
Mitigation plan	61 (80%)	43 (70%)
Conservation easement	31 (41%)	11 (39%)
As-built plans	38 (50%)	4 (11%)
Monitoring	66 (87%)	21 (35%)
Elevated Structures	13 (17%)	8 (61%)

Due date for construction	34 (45%)	19 (57%)
Prohibited Acts	36 (47%)	25 (80%)
Corrective Action	59 (78%)	7 (20%)
Financial Assurances	9 (12%)	3 (43%)

Number of sites required	159
Number of sites constructed	136 (86%)
Number of sites with required wetland acreage	65 (50%)
Number of sites with excessive open water	58 (42%)
Number of sites with insufficient hydrology	43 (32%)
Number of sites with wetland soils	80 (59%)
Number of sites with active erosion	28 (20%)
Number of sites with poor water clarity	36 (26%)
Number of sites with invasive species problem	11 (8%)

Estimated loss of wetlands	45% of projects did not replace at a min. of 1:1	55 acres
Legal Rating	13 in compliance (18%)	61 non-compliance (82%)
Biological Rating	20 successful (29%)	49 failure (71%)
Overall rating	15 successful (22%)	54 failure (78%)
Quality rating	Average rating 3.75	

Follow-up site inspection performed by field staff	20 projects inspected (26%) 57 not inspected (74%)
Reason for follow-up site inspection	13 routine follow-ups (17%) 6 followed up due to a reported complaint (8%) 1 unknown reason (1%)

Comments:

- 1 of every 6 mitigation projects (17%) receives routine follow-up by DEQ staff.
- 1 of every 12.5 mitigation projects (8%) receives follow-up due to a complaint.
- 1 of every 7 mitigation projects (14%) were not constructed. (Authorized wetland impacts were completed.)

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Age of Mitigation Projects

Sixty-four of the 78 mitigation projects evaluated had been constructed. The age of the constructed wetlands varied between one and ten years and averaged three years. Fifty-four of the mitigation projects (84%) were at least 2 years old at the time of evaluation. (See Figure 10.)

DEQ added the following paragraph. "Normally, as mentioned earlier in this report, a minimum of two years is required for a mitigation area to develop wetland characteristics. Therefore, those projects less than two years old may have not had adequate time to fully develop wetland characteristics."

There is no basis for an arbitrary two year exemption from evaluation. The study results did not include any project that was too premature to rate. Consequently, this appears to be an attempt by DEQ to discredit or minimize the report results.

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1) Number of Sites Constructed

One hundred thirty six of the 159 mitigation sites, (86%) were partially completed or totally constructed.

Twenty-three of the 159 mitigation sites, (14%) were not constructed and these projects are in violation of their permits

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These results are summarized in Figure 13.

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Figure 13 was eliminated

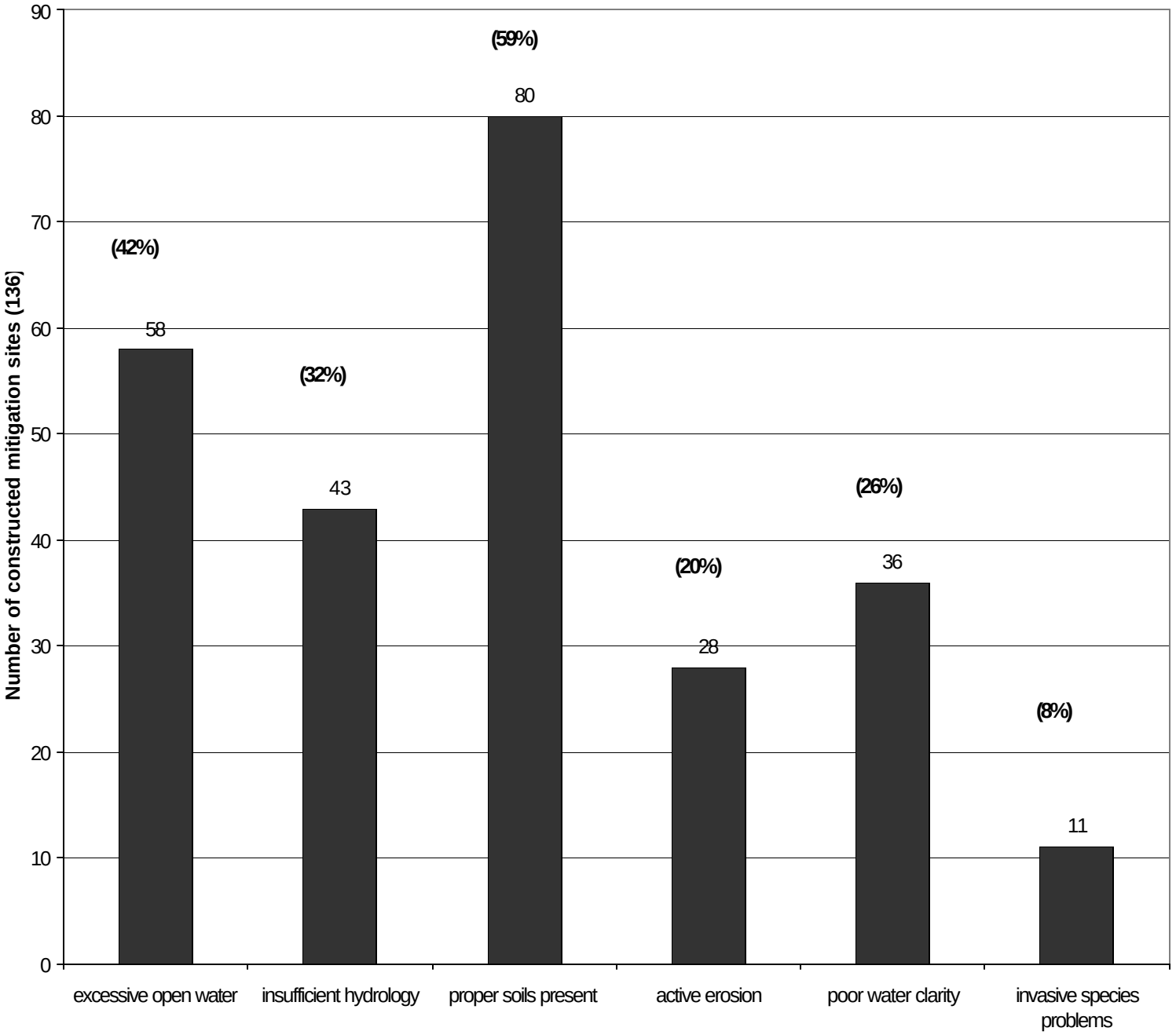

Figure 13: Physical and Biological Characteristics of the Constructed Wetlands

2) Legal Rating

Thirteen of the 74 required mitigation projects, (18%) earned an “in compliance” rating in the legal category for having complied with all mitigation related permit conditions.

Sixty-one of the 74 required mitigation projects, (82%) were given a “noncompliance” rating for the legal category. This rating indicated that the permittee had not complied with all mitigation related permit conditions. (See Figure 14.)

3) Biological Rating

Twenty of the 69 required mitigation projects, (29%) were given a “successful” rating for the biological category. A “successful” rating was given to projects that created the required amount of wetlands regardless of the specific type to be created. Five of the projects were not given a “biological” rating as insufficient time had elapsed between the wetland construction and the field evaluation.

Forty-nine of the 69 required mitigation projects, (71%) were give an “unsuccessful” rating for the biological category. An “unsuccessful” rating was given to projects that did not create the required amount of wetlands regardless of the specific type to be created. (See Figure 15.)

Figures 14 and 15 were eliminated

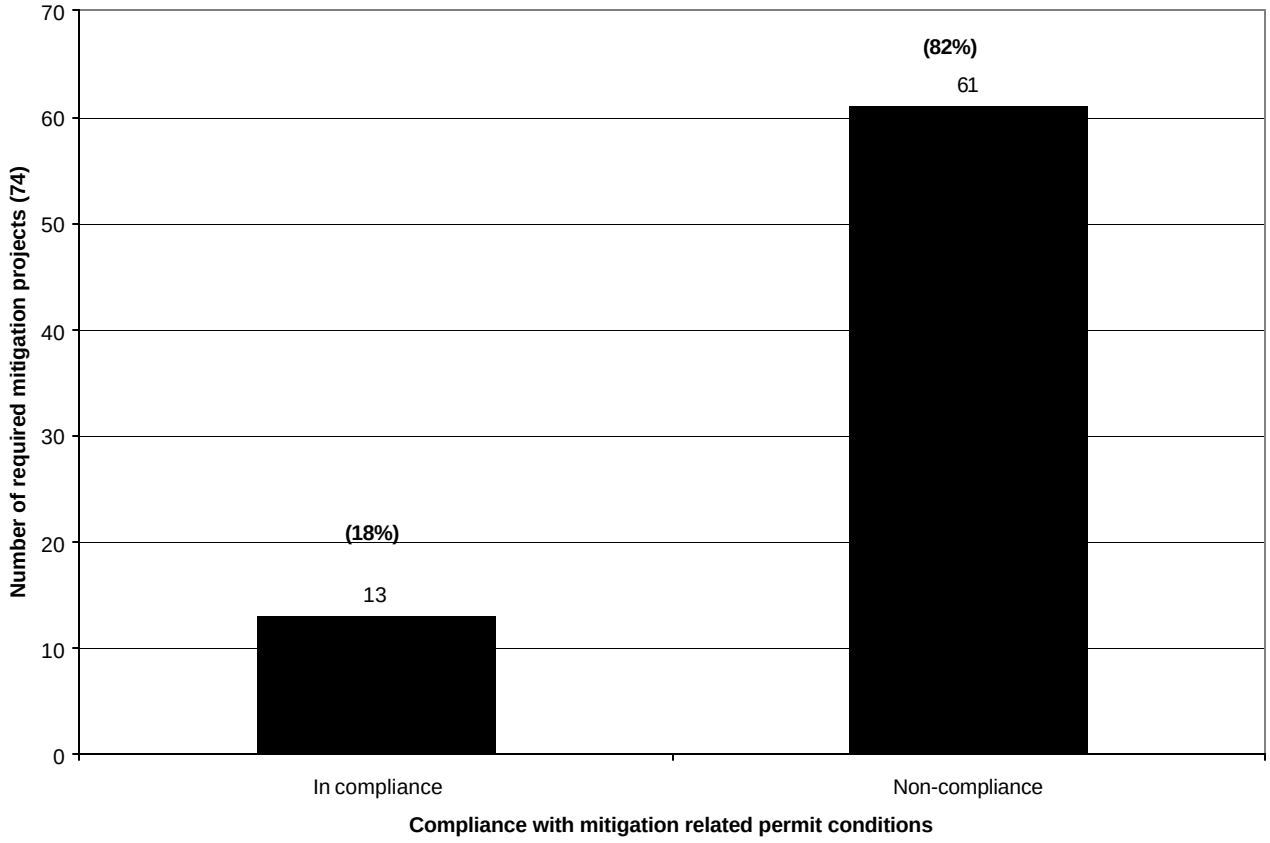

Figure 14: Legal Ratings

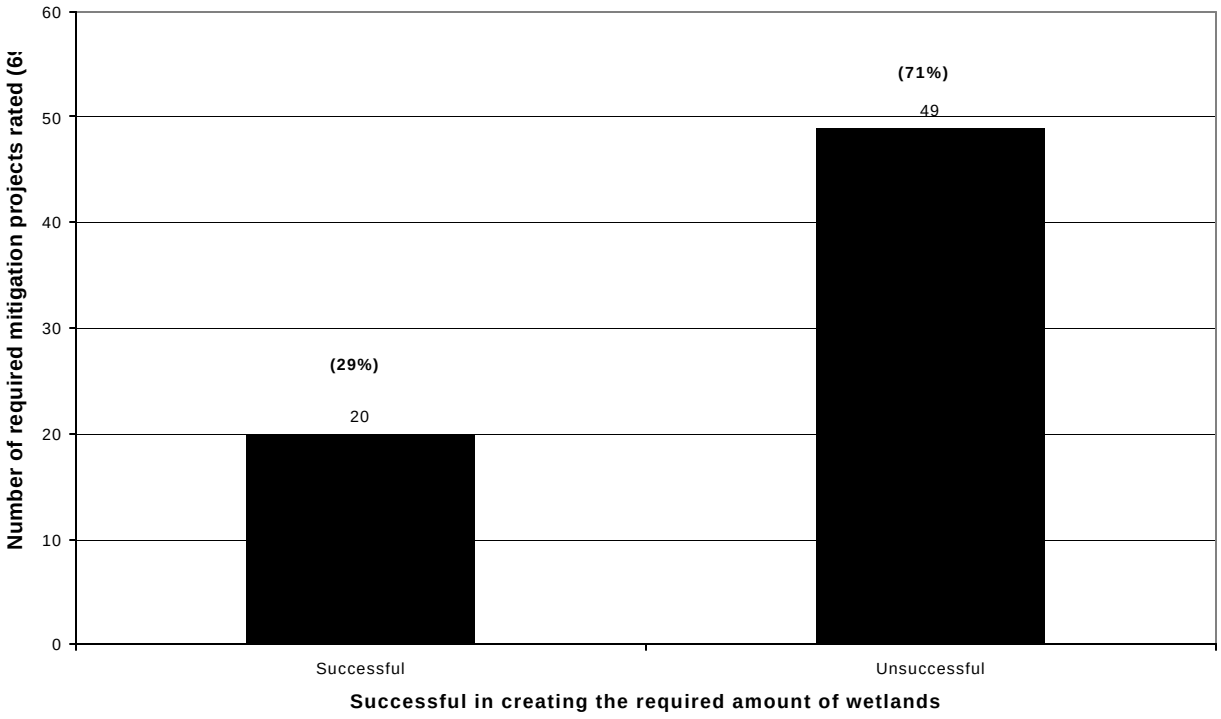

Figure 15: Biological Rating

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The percentage of projects receiving an "unsuccessful" rating would have been higher if the required "type" of wetland to be created had been considered.

4) Overall Rating

Fifteen of the 69 required mitigation projects, (22%) were give a "successful" overall rating. The "successful" overall rating was given to projects that received both an "in compliance" legal rating and a "successful" biological rating. In addition, several projects receiving a "noncompliance" legal rating but a "successful" rating in the biological category were judged to be successful overall.

Fifty-four the 69 required mitigation projects, (78%) were given an "unsuccessful" overall rating. (See Figure 16.)

Figure 16 was eliminated

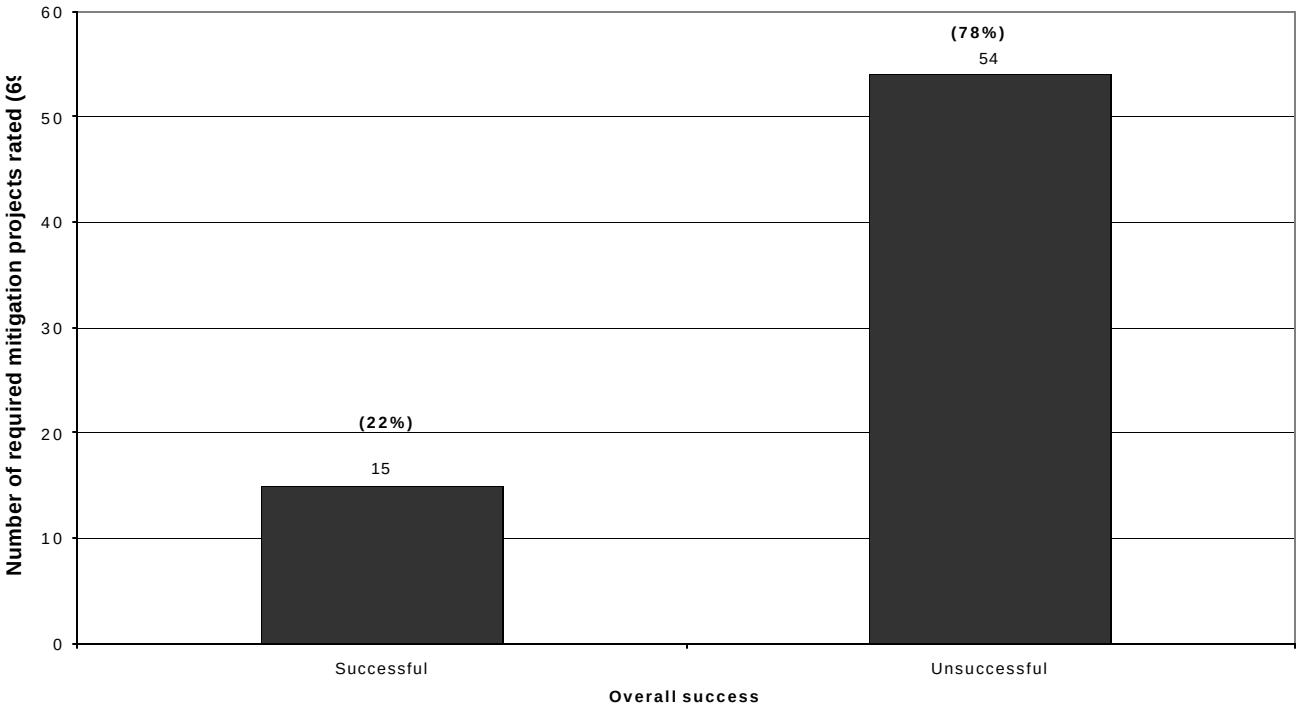

Figure 16: Overall Ratings (combination of "legal" and "biological" ratings)

5) Quality Rating

The scores given to projects ranged between 0 to 8. Eight projects received a score of 0 (meaning the required mitigation was not constructed). No projects scored higher than 8. The average score for all mitigation projects evaluated was 3.75. (See Figure 17.)

Figure 17 was eliminated.

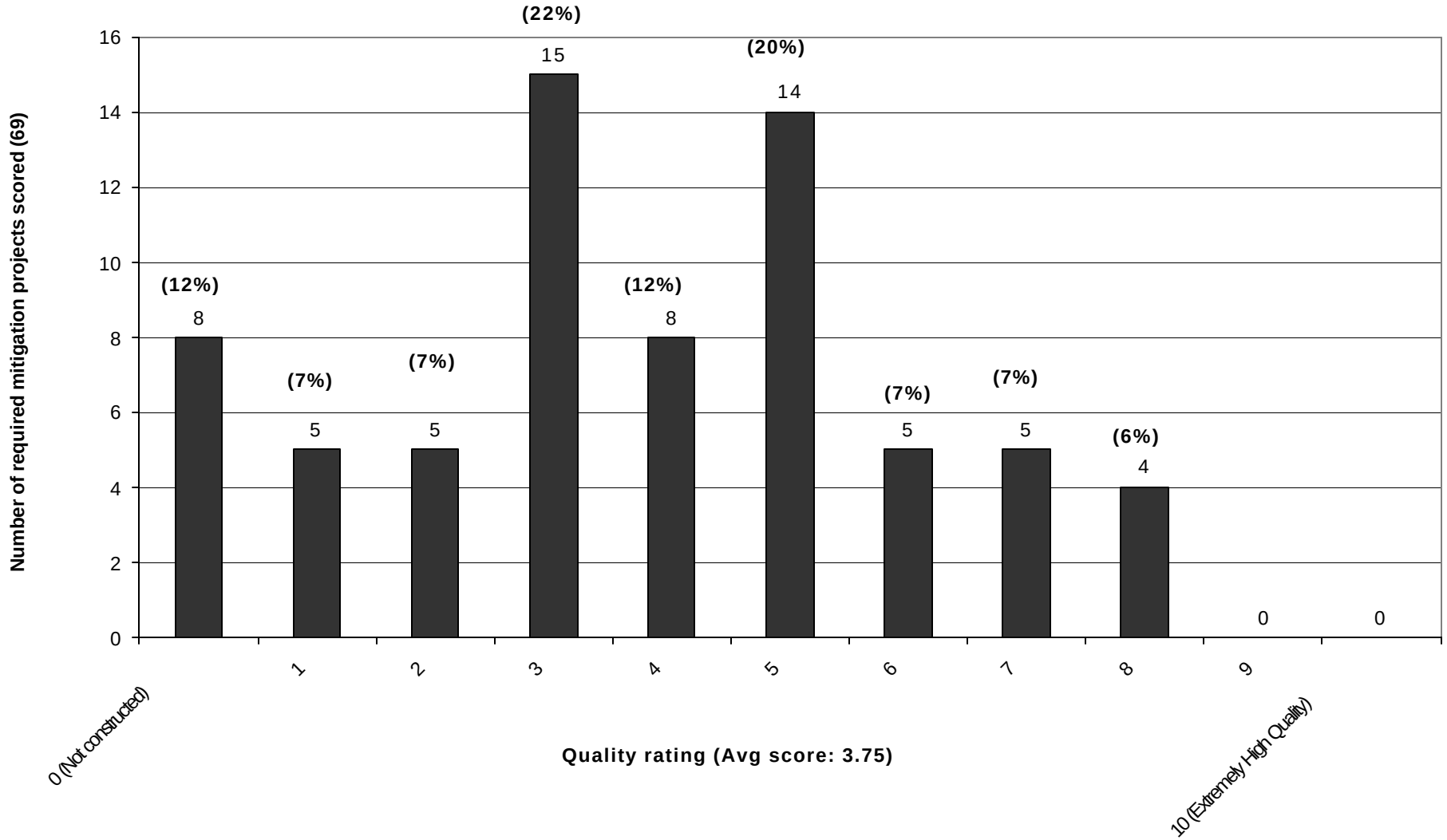

Figure 17: Quality Ratings

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E MDEQ Oversight and Follow-up

During the study, each file was examined for evidence or documentation that MDEQ regulatory staff conducted a follow-up (post permit issuance) inspection of the mitigation site. To determine how effective DEQ staff are in routinely following up on mitigation projects, the reason for the inspection was noted on those projects where a follow up inspection had been conducted.

1) Follow-up Inspections

Twenty of the 77 mitigation projects, (26%) evaluated during the study received a follow-up inspection by MDEQ regulatory staff. Fifty-seven of the 77 mitigation projects, (74%) did not receive a follow-up (post permit issuance) inspection. (See Figure 18.)

Figure 18 was eliminated

2) Reasons for Follow-up Inspection

Thirteen of the 77 mitigation projects, (17%) evaluated during the study received a routine follow-up compliance inspection by the MDEQ regulatory staff.

Six of the 77 mitigation projects, (8%) evaluated during the study received a follow-up compliance inspection due to a complaint being filed with the MDEQ regulatory staff.

One of the 77 mitigation projects, (1%) evaluated during the study received a follow-up compliance inspection for unspecified reasons. (See Figure 19.)

Figure 19 was eliminated.

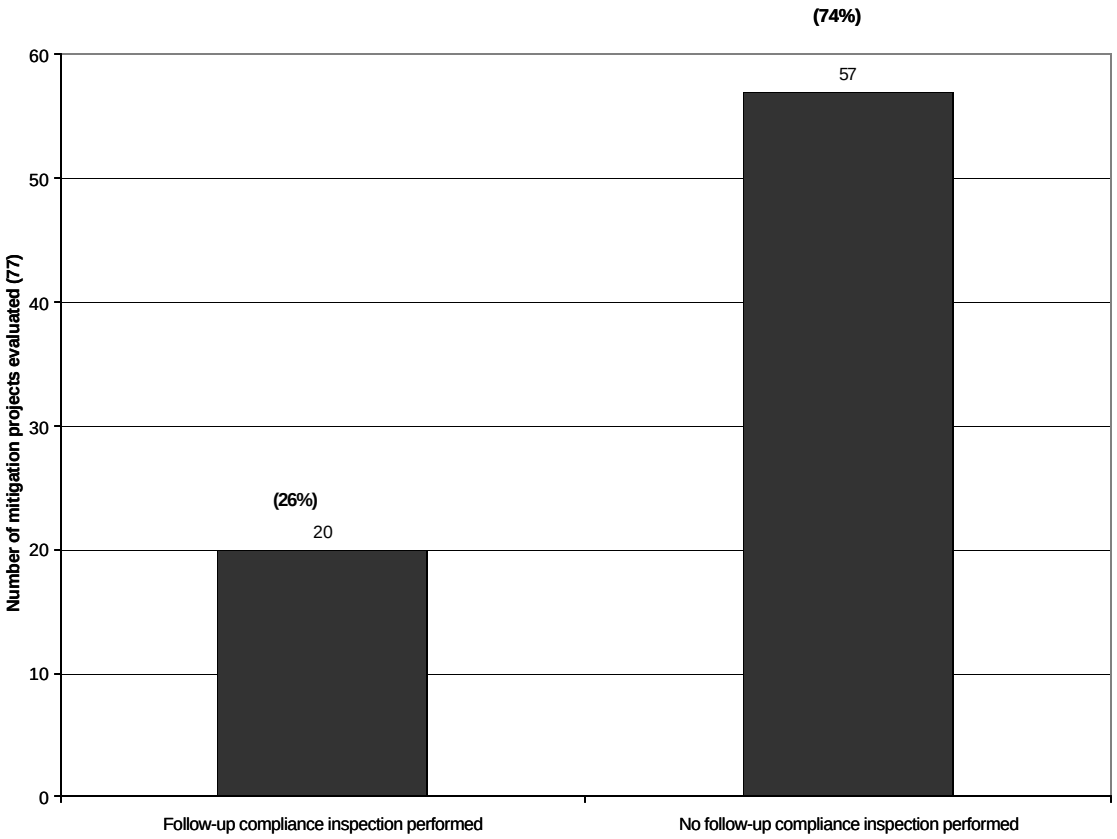

Figure 18: Compliance Inspections Performed

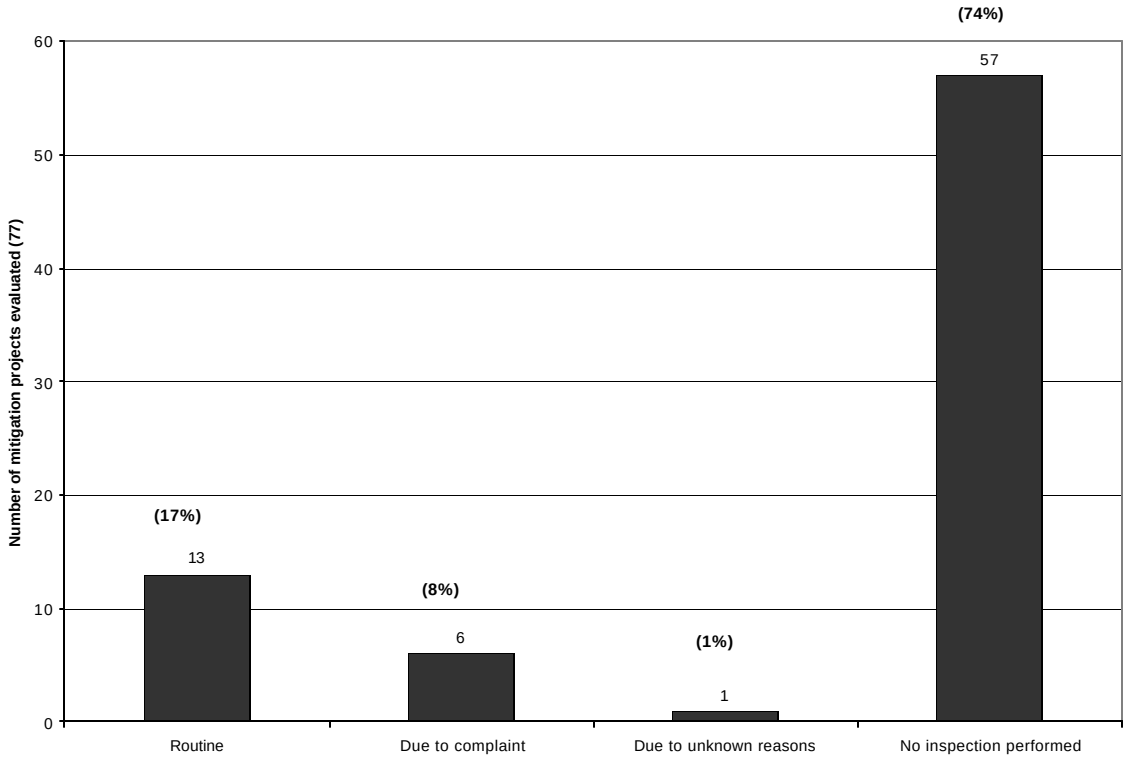

Figure 19: Reasons for Compliance Inspections

The DEQ drafted and added the first two pages of the Discussion section in the Feb. 2001 final version sent to EPA (see pages 39 and 40 of Feb. 2001 version).

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IV. DISCUSSION

This study was conducted to evaluate all aspects of the MDEQ's wetland mitigation program from permit issuance to final certification. This section will discuss these results and the effectiveness of the existing program. General suggestions will be made on how to improve each aspect of the program. Specific conclusions and detailed recommendations follow in Chapter V of this report.

A) Mitigation Ratios

Regulatory staff appear to use the 1.5:1 ratio in "typical" situations and frequently use 2:1, or slightly higher ratios, in "non-typical" situations. The use of mitigation ratios seems to be fairly consistent across the state and does

not represent an area of concern. New mitigation rules (which became effective April 27, 2000) set standard mitigation ratios at 5:1 for rare wetlands, 2 :1 for forested wetlands, coastal wetlands, and wetlands that border on inland lakes, and 1.5 :1 for all other types. These ratios apply when the mitigation will be of a similar ecological type as the impacted wetland. Mitigation ratios may be increased when the replacement wetland is of a different ecological type than the impacted wetland. The new mitigation rules will improve program consistency while not significantly altering the size of most mitigation projects. No specific changes are needed regarding mitigation ratios.

B) On-site vs Off-site Mitigation

The vast majority of mitigation projects (76%) evaluated during the study were constructed on the same site as the impacted wetlands (on-site). Regulatory staff appeared to require on-site mitigation whenever there was available (non-developable) uplands to construct it. Very little consideration appeared to be given to the suitability of the available uplands to support wetland hydrology and vegetation. It appears that off-site mitigation was used primarily when the required mitigation acreage was larger than the project site could accommodate.

This preference for on-site mitigation has contributed to the poor quality of many mitigation wetlands. Requiring on-site mitigation often results in wetlands being constructed in the worst possible locations. Often the new wetlands are totally surrounded by developed areas where the only available hydrology is from urban runoff (i.e., developed areas such as parking lots and residential subdivisions). The wetlands often have poor water quality that directly affects the vegetative community. These mitigation wetlands often have limited value for wildlife.

Regulatory staff appear to have been too strict in interpreting the language of the rules regarding the siting of mitigation projects. The language within the old mitigation rules states “mitigation shall be provided on-site where practical and beneficial to the wetland resources. This language remains basically unchanged within the new mitigation rules. If regulatory staff placed greater emphasis on siting mitigation wetlands where they are most likely to develop successfully and provide multiple functions without being negatively impacted by surrounding land use, the quality of mitigation wetlands would improve.

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C) Permit Issuance (Timing vs Content)

Timing of permit issuance and the specific contents of the permit are two mitigation related issues that require attention. Timing here refers to the relationship between permit review and final issuance, and the need for

detailed information regarding wetland mitigation. Content refers to the specific information that must be referenced in the permit at the time of issuance.

The detailed review of permit documents examined during this study and the associated file information revealed significant differences in when permits were issued and what information (permit conditions) was contained in those permits.

1. Timing

The first issue to be addressed is the timing of permit issuance. In the early years of the mitigation program, standard procedure was to issue a permit (authorizing wetland impacts) only after all information needed to make that decision had been submitted and approved. The statutorily imposed 90-day timeframe in Part 303, which results in automatic permit issuance if exceeded, often made this difficult to achieve. Applicants were often directed to withdraw their applications or face denials because of this 90-day timeframe.

As the numbers of applications increased and individual workloads of regulatory staff increased, more permit applications were denied simply to comply with the 90-day statutory timeframe. In many cases permits were later issued when statutory timeframes were no longer an issue. In an effort to minimize unnecessary denials, staff were advised to issue permits with "conditions" requiring that the lacking information be submitted within a designated timeframe (usually within 90 days). In recent years this process of issuing permits (authorizing wetland impacts) prior to receiving an approved mitigation plan, conservation easement or other critical information has become commonplace. In some districts, this process is now routine and it is the exception to have all the necessary information submitted and approved prior to permit issuance. Some permits evaluated during this study were issued prior to a mitigation site even having been identified.

While this process may at first appear to benefit field staff (by avoiding unnecessary permit denials), it in fact places an additional burden on staff. During the application process, the burden for supplying all necessary information is on the applicant and their consultants. However, once a permit is issued, with information to be submitted later, the burden for obtaining that information is now transferred to staff. If the information is not submitted as required, it now becomes the staff's responsibility to take follow-up action to obtain it.

Due to the continuous flow of new applications, regulatory staff are routinely dealing with new applications (and new 90-day deadlines) and

have difficulty going back to police permits already issued that require follow-up information to be submitted. Once a permit is issued with outstanding issues yet to be resolved, the MDEQ loses virtually all leverage over the permittee unless or until legal action is threatened or initiated.

The current practice of issuing "incomplete permits" has negatively impacted an already unproductive and ineffective wetland mitigation program. Permittees often fail to submit the "required" information, which results in large numbers of permit violations. The MDEQ regulatory staff are unable to follow-up on these permit violations. Permit violators that receive no follow-up contact from MDEQ regulatory staff are sent a clear message by this inaction. That message being, that the MDEQ will not follow-up on their project and compliance with their MDEQ permit can be a low priority item or ignored all together. The process of issuing these "incomplete permits" has resulted in a "Department created" enforcement problem.

The LWMD needs to examine and address the inability of regulatory staff to perform follow-up compliance inspections in most district offices.

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2. Permit Content

The second issue to be addressed concerns the specific information that should be contained within a permit document

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(2) Mitigation Plan

This permit condition should reference a specificmitigation proposal that contains construction plans and narrative or a requirement to submit and obtain approval for a plan prior to construction of the project. This condition should reference who prepared the plan and its design date. What an approved mitigation plan should include is covered under Item E in this Chapter.

The above referenced highlighted area was added by DEQ and totally changes the purpose of the condition which is to NOT ISSUE a permit until an acceptable plan has been submitted.

(4)Conservation Easement

This permit condition must specify the size of the area being placed under the conservation easement. This condition should also state that the easement document must be obtained by the MDEQ prior to permit issuance or submitted by a specific date.

The above referenced highlighted area was added by DEQ and totally changes the purpose of the condition which is to NOT ISSUE a permit until an acceptable conservation easement document has been submitted.

(5)Financial Assurances

This permit condition must specify the dollar amount of the financial instrument. This condition should also be drafted to clearly state that the MDEQ will not hesitate to secure the funds to insure compliance with all permit conditions. This condition should state that the financial assurance documents must be provided to the MDEQ prior to permit issuance.

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(7)Mitigation Completion Date

This permit condition must specify a date by which all facets of the replacement wetland's construction must be completed by or require submittal and approval of these dates as part of a mitigation plan submitted by a specified date prior to the construction of the project. This includes land balancing, placement of hydric soils, vegetative plantings, and placement of wildlife habitat structures.

The above referenced highlighted area was added by DEQ and totally changes the purpose of the condition which is to require a definite completion date on the permit.

(8)Notification of Mitigation Completion

This permit condition should require the permittee to notify the MDEQ in "writing" that the mitigation construction is completed. This condition requires the permittee to document that the work was completed by the required deadline.

(10) Prohibited Activities

This permit condition should prevent the permittee from cutting vegetation, placing structures (such as aeration devices and water fountains) or using chemicals within the mitigation area. This condition should state these activities are prohibited in perpetuity.

(11) Monitoring Requirements

This permit condition should require the permittee to prepare and submit an annual monitoring report to the MDEQ. This condition should state what items the monitoring report should contain, the number of years of monitoring required and a standard annual deadline date for submittal. It is recommended that the standard monitoring timeframe be five years with an annual deadline date of November 1. A three-year monitoring requirement may be appropriate for smaller projects or projects with a high probability of success. Monitoring may be terminated once the mitigated wetland achieves and maintains its designed performance standards.

DEQ added this last sentence.

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(15) Counter Signature

This permit should obligate the permittee to accept and comply with all conditions of the permit. This condition should also state that the permit is not valid until signed by an authorized representative of the MDEQ.

b. Alternative Mitigation Permit Conditions

While it is not recommended that permits be issued before having all mitigation details addressed, it is possible that this situation may arise. In such cases, up to four of the "required" mitigation permit conditions may not be applicable. These conditions are Mitigation Plan, Conservation Easement, Financial Assurances, and Mitigation Completion Date. These four "required" permit conditions should be redrafted for use in situations where specific information needs to be submitted within a designated timeframe. All other "required mitigation conditions" can, and should, be used as drafted.

When these "alternative" permit conditions are used, innovative methods should be implemented to insure that the required information is submitted within the specified timeframe. Concepts that should be explored include issuing the permit for a very limited timeframe (i.e.,

the period of time the applicant is given to submit the required information) and/or entering into a separate consent agreement with the permittee that stipulates penalties for noncompliance.

Page 55

D) Mitigation Plan

As stated earlier the MDEQ should withhold issuance of a permit until such time that a complete mitigation plan has been submitted and approved. This raises the question of what constitutes a "complete mitigation plan" and what information should it contain? In a general sense, the mitigation plan should contain information detailing: 1) why the site was chosen, 2) the existing conditions, and 3) the proposed alterations needed to make it a wetland.

Review of the 76 permit documents and their related mitigation information revealed that significant differences exist across the state in what is considered an acceptable mitigation plan. While some permits referenced a specific mitigation document that contained detailed plans and specifications, others simply stated the need to create a specific amount of wetlands to offset those being destroyed. In most cases where a mitigation plan had been received, it was "conceptual" in nature and contained very little or no specific hydrological data to document that the site could be converted into a wetland.

Conceptual mitigation plans should only be acceptable when the mitigation is completed "up front" (i.e., before initiating the permitted wetland impacts.) or if it is followed up with a complete plan. No examples of "up front" mitigation were found in the projects evaluated during this study. While "up front" mitigation may occur in a few rare situations, for all practical purposes "up front" mitigation does not occur in Michigan.

The first highlighted section was added by DEQ and defeats the purpose of the statement. The second highlighted section was eliminated by DEQ.

Page 56

The current practice of including no specific performance standards, or only very general performance standards (regarding the size and possibly the type of wetland to be constructed), has resulted in many unenforceable permits and poor quality mitigation wetlands. Wetlands dominated by a single species such as a monotypic cattail stand or containing a preponderance of invasive wetland species such as reed canary grass are technically successful. If MDEQ staff attempted to have modifications or corrections made to a mitigation site, the general language of many permits would make enforcement difficult at best. However, even using these minimal standards, the study found a 71% failure rate for the biological-rating category.

Model performance standards are needed for the typical elements of all mitigation projects. Performance standards should clearly notify the permittee of their obligations while at the same time informing them of the criteria by which the project will be judged. Performance standards will also provide the MDEQ with specific measures for determining success and justification to require corrective action (or enforcement) when the standards are not met.

Model performance standards should be general in nature and field staff should have the flexibility to modify them to address regional or site specific issues. Model performance standards are needed for the following elements:

Page 57

4) Aesthetics

This performance standard should be general in nature and prohibit any disturbance to the created wetlands. Activities such as off road vehicles (ORV) use, vegetative manipulation and unauthorized construction activities are examples of disturbances that should be addressed.

Page 59

Of the 66 permits evaluated that required annual monitoring, only 21 (35%) permittees were found to be in compliance. In the vast majority of cases where the permittee failed to submit the required monitoring reports, MDEQ staff took no action to obtain the information or pursue enforcement. In fact, due to the lack of accurate record keeping or a standard mitigation tracking system, most MDEQ staff probably had only minimal knowledge of which permits required the submittal of a annual monitoring report. MDEQ staff was largely dependent upon the voluntary compliance of the permittee for submission of a monitoring report. However, even in cases where the monitoring reports were submitted and significant problems were identified, MDEQ staff generally failed to take follow-up action. It appeared as though many of the reports were simply filed.

Page 60

This section should list the specific monitoring requirements and performance standards from the permit and/or approved mitigation plan. Typical information provided here would include the size and type of the mitigation wetland required, deadline for completion, length of monitoring required, the specific elements to be studied (i.e., hydrology, vegetation, soils, etc.) and the time periods during which the monitoring must occur. A copy of the permit and the approved mitigation construction drawings should be included.

Page 61

The use of financial assurances has the potential to significantly increase the effectiveness of the MDEQ's wetland mitigation program. Permittees having to commit significant sums of money, or tie up available credit for financial assurances, should be more inclined to comply with mitigation requirements. This is especially true if failure to comply will likely result in significant financial loss. The new mitigation rules [R 281.925 Rule 5 (9) (10)] now in effect provide MDEQ staff with the ability to require financial assurances for all mitigation projects. However, the DEQ currently lacks the authority to draw on these financial instruments.

The development of specific operating procedures, staff guidance and training regarding financial assurances was beyond the scope of this study. The MDEQ has initiated an effort to develop guidance and procedures for the use of financial assurances.

Page 63

4. Erosion Problems

Serious active erosion was observed in 20% of the mitigation sites inspected. Again, as with the placement of soils, this problem is controllable and is directly related to the permittee not completing the project as required and the MDEQ's lack of follow up. Erosion problems are generally not significant if discovered early and corrected. However, left untreated a serious erosion problem can degrade water quality and result in the filling of the constructed wetlands. Requiring standard erosion control practices during construction, conducting follow-up compliance inspections, and requiring corrective measures when necessary are actions needed to solve this problem.

Page 65

As previously stated the hydrological data generated prior to selecting most mitigation sites is minimal. However, it is this hydrological information that is critical to the success or failure of virtually every mitigation project. When replacing scrub-shrub or forested wetlands this hydrological information is even more critical. This becomes significant because in most circumstances the MDEQ requires "in kind" replacement for the impacted wetlands. This means when forested wetlands are impacted by a project, the replacement wetlands must be forested as well. In Michigan, forested wetlands comprise the largest segment of wetland types, and the most commonly impacted wetland type.

Given the extremely high failure rate for all mitigation projects and the difficulty in creating the wetlands types most often impacted by development

projects, the MDEQ should examine alternatives that could improve mitigation success. One potential change would be to the "in kind" replacement requirement. Applicants could be given a choice whether to construct "in kind" wetlands at the current ratios (generally 1.5:1 or 2:1) or "out of kind" emergent wetlands at a higher ratio (3:1 or 4:1). Allowing applicants the option of creating "out of kind" emergent wetlands at a higher ratio would likely result in more wetlands, higher quality mitigation wetlands and a higher rate of success (and compliance) for mitigation projects. Continuing to require "in kind" replacement of scrub-shrub and forested wetlands ignores the reality of the current mitigation program and leaves little hope for real program improvement.

Page 66 & 67

I Programmatic Issues

The study clearly revealed that Michigan's overall wetland mitigation program as well as the quality of most mitigation wetlands is very poor. While there are many factors that contribute to this, the following programmatic items stand out as the major contributing factors:

1) The statutory 90-day deadline contained within Part 303.
2) The MDEQ's requirement for "in kind" replacement for impacted wetlands.
3) The MDEQ's preference for on-site mitigation as opposed to encouraging off-site restoration of historic wetlands.
4) The MDEQ's willingness to issue permits based on conceptual mitigation plans or in some cases, no mitigation plan at all.
5) The MDEQ's willingness to issue permits containing conditions that allow the permittee to submit mitigation plans, conservation easements, financial assurances or other critical information in the future.
6) MDEQ's poor record keeping and tracking of permits requiring wetland mitigation.
7) MDEQ's failure to perform follow-up compliance inspections of the permitted project or the required wetland mitigation.
8) The absence of compliance and enforcement staff within the LWMD.
9) The lack of a certification process where by a permittee receives final approval of a mitigation project that "officially closes a file.".

The statutory deadline in Part 303 requires that MDEQ staff evaluate a proposed wetland project, determine whether a permit can be issued, and then require and evaluate detailed mitigation plans all within 90 days from the receipt of a complete application. In many cases staff are barely able to determine whether a permit can be issued within the 90-day time limit. This leaves little or no time to consider mitigation issues. This is a primary reason why staff routinely issue permits that allow the mitigation details to be submitted later.

In addition to the statutory deadline, heavy workloads often prevent MMDEQ staff from spending the time required to evaluate detailed mitigation designs when they are provided. Most MDEQ staff have large backlogs of pending permit applications (and complaints), they simply do not have the luxury of spending the time needed to adequately review most mitigation proposals. There is also hesitancy to request additional information (even when needed) because that will cause further delays and require even more review time in the future. Heavy workloads are also the reason that most staff are unable to review monitoring reports and conduct follow-up compliance inspections of mitigation projects. Careful examination of monitoring reports and conducting compliance inspections are critical to ensuring that mitigation projects are constructed as designed and develop as expected.

In addition to staff's limitations, most development projects are constructed within tight time frames. Permit applicants are generally critical of the MDEQ regarding the length of time it takes to review applications and issue permits. The emphasis is to issue permits as quickly as possible. Significantly lengthening application review periods in order to require applicants to collect the data needed to support using a site for mitigation would be very unpopular with the regulated community and unlikely to be acceptable to MDEQ management. It would also be impractical to require most permit applicants to monitor potential mitigation sites for one to two years prior to implementing a project.

Given the MDEQ's current practice of approving mitigation projects with little or no supporting hydrological data and then conducting no follow-up inspections or oversight, it is not surprising that 78% of all mitigation projects fail. The MDEQ needs to seriously reevaluate its current practices and staff priorities. It is imperative that MDEQ staff continue to monitor projects where wetland impacts have been authorized and mitigation required after the permit has been issued. The practice of issuing wetland permits (requiring mitigation) then conducting no follow-up, is likely the single most significant factor contributing to the poor quality of the DEQ's mitigation program. It is this absence of a MDEQ presence after permit issuance, that has allowed many permittees to put forth a token effort or ignore their mitigation requirements all together.

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V. CONCLUSIONS AND RECOMMENDATIONS

This section expands upon the discussion section, makes conclusions regarding the current program and provides specific and detailed recommendations for improving the mitigation program.

A. New Mitigation Rules

The MDEQ should immediately develop guidance and procedures to assist regulatory staff to effectively and efficiently implement the new wetland mitigation rules. The mitigation rules that became effective on April 27, 2000 have the potential to vastly improve the MDEQ's wetland mitigation program. The rules identify specific elements that now must be included within a mitigation plan. It is these new requirements for items including performance standards, a monitoring plan, a schedule for completion, financial assurances and provisions for long-term management and protection of the mitigation site that will potentially lead to the most significant improvement. However, procedures need to be developed and guidance provided to staff so that these rules are administered consistently throughout the state.

B. On-Site Mitigation Vs Off-Site Mitigation

Permitting staff should place a greater emphasis on siting mitigation wetlands where they are most likely to succeed and provide the greatest environmental benefits. Staff of the MDEQ required the vast majority of mitigation projects examined during the study to be constructed on the same site as the wetlands being impacted (on-site mitigation). This preference for requiring on-site mitigation has contributed to the poor quality of many mitigation wetlands. On-site mitigation often results in wetlands being constructed in upland areas not suited for wetland development. On-site mitigation also results in many wetlands being located adjacent to buildings, parking lots and other human disturbances that negatively impact the functions they are meant to provide. Permitting staff appear to have been too strict in interpreting the administrative rules regarding the siting of mitigation projects. Siting mitigation wetlands where they are most likely to succeed would result in an increased number of off-site mitigation projects.

Page 68 and 69

C. Permit Issuance

Regulatory staff should be directed to withhold issuance of a permit authorizing wetland impacts until after the receipt and approval of a complete mitigation plan that includes performance standards for the constructed wetland, a monitoring plan, a schedule for completion, provisions for management and long-term protection (i.e., conservation easement), financial assurances, and any additional information deemed necessary by the reviewer. Applications should be denied by MDEQ staff if the required mitigation information cannot be submitted, reviewed, and approved within the statutory 90-day deadline.

One of the most significant problems identified during the study was MDEQ staff's routine procedure of issuing a permit prior to having details of the mitigation project finalized. In fact, it was not uncommon for the MDEQ to issue a permit with only the size of the replacement wetland determined. All other mitigation details were to be worked out later and submitted for approval. This procedure has lead to many incomplete files where the "missing" information was never submitted. Often critical requirements of the permit, such as the placement of a conservation easement over the mitigation area and all of the remaining wetlands on-site were not satisfied.

Applicants have the option of voluntarily withdrawing their application to avoid denial of the project. Permits containing conditions allowing information to be submitted later should not be issued.

D. Permit Composition

In order to improve the consistency and thoroughness of DEQ wetland permits, the department should establish standard mitigation specific permit conditions and require their use in every permit issued requiring wetland mitigation.

The sophistication, complexity and quality of permit documents evaluated during the study varied considerably throughout the state. While some permits were very thorough and well written, many lacked the basic and critical elements needed to insure that adequate mitigation would be provided by the permittee.

The use of mitigation related permit conditions is inconsistent throughout the state and results in many poorly written and unenforceable permits. See appendix H for the recommended list of mitigation permit conditions.

E. Mitigation Plan

The MDEQ should establish detailed criteria that must be included in an acceptable mitigation plan and provide regulatory staff the guidance to withhold approval of the plan until all the required information is received. Conceptual mitigation plans should not be approved.

The MDEQ's routine acceptance of conceptual mitigation plans (or simply the commitment to provide mitigation), has lead to significant regulatory and enforcement problems. In order to improve MDEQ's overall mitigation program, regulatory staff must stop accepting conceptual plans or general commitments to provide mitigation. Only complete mitigation plans should be accepted. See appendix I for the elements contained within an acceptable mitigation plan.

F. Performance Standards

The MDEQ should develop model performance standards for evaluating the success of mitigation projects and require their use on all permits. Separate performance standards should be developed for emergent, scrub shrub and forested wetlands.

Performance standards are the criteria by which replacement wetlands are evaluated to determine whether the mitigation requirements have been met. The study revealed that the DEQ has never developed general performance standards or routinely incorporated them into wetland permits. This lack of performance standards is a major shortcoming of DEQ permits. Having no performance standards made determining what constituted a successful mitigation project (during the study), subjective. The lack of performance standards could also make it difficult for staff to require or obtain corrective measures on unacceptable mitigation projects. See appendix J for a list of recommended performance standards.

G. Monitoring Plan

The MDEQ should develop standard criteria, methods and reporting format to be used by permittees in the monitoring of mitigation wetlands. Regulatory staff should also require long-term monitoring of <u>all</u> mitigation sites

One of the key elements of a DEQ wetland permit (or mitigation plan) involves the monitoring requirement. The study revealed that DEQ staff does an excellent job in routinely requiring that mitigation projects be monitored. However, the monitoring requirements are general in nature and not consistent throughout the state. The standard monitoring period should be five years in duration. A three year monitoring program may be appropriate for small mitigation projects or projects where the chance of success is very high (i.e., restoration of a historic wetland).

The monitoring plan should specify when the constructed wetland will be inspected, what biological data will be gathered, the methods used to collect the data and how and when that information will be submitted to the department. The monitoring plan is the vehicle by which the permittee documents that the individual performance standards have been satisfied and, ultimately that the mitigation requirements have been met. See appendix K for the recommended model mitigation monitoring plan format.

H) Financial Assurances

The Department should immediately take all steps necessary to obtain the "authority" to draw on financial assurances. The MDEQ should also develop procedures and guidance to assist staff in obtaining financial assurances from permittees. Regulatory staff should be directed to require financial assurances for all wetland mitigation projects.

The mitigation study revealed that MDEQ staff rarely requires financial assurances to insure that mitigation requirements will be satisfied. However, due to the recent promulgation of new mitigation rules, staff will now be required to obtain financial assurances for virtually all wetland mitigation projects. Financial assurance requirements should be an element of every approved mitigation plan or appear as permit conditions.

The routine use of financial assurances has the potential to drastically improve the quality of mitigation wetlands and the effectiveness of Michigan's wetland mitigation program. However, the MDEQ does not currently have the authority to draw on financial assurances. This is a major problem and must be corrected.

Financial assurances and their use are new concepts for most DEQ regulatory staff. The Department must develop procedures and guidance as well as provide training for all staff involved in obtaining financial assurances.

Unfortunately, the development of specific operating procedures and staff guidance regarding financial assurances was beyond the scope of this study. Therefore, specific recommendations cannot be made.

I) Wetland Restoration

Staff should scrutinize potential mitigation sites more closely and require the restoration of historic wetland, whenever possible.

Many of the highest quality mitigation projects evaluated during the study were sited in upland areas that historically had been wetlands. The level of success and the quality of the constructed wetlands were considerably higher when historic wetlands were restored back to their original wetland conditions.

Applicants should be required to locate potential mitigation sites that were historically wetlands. In many instances these areas can easily and cost effectively be restored to high quality, fully functioning wetlands. Since many wetlands were drained for conversion to agricultural use, they are common statewide.

J) Out of Kind Replacement

The MDEQ should consider allowing the creation of emergent wetlands as mitigation for scrub-shrub and forested wetlands whenever possible. **Mitigation ratios should be increased accordingly.**

Creating scrub-shrub and forested wetlands is difficult, takes long periods of time and is rarely successful. In fact, not a single example of a successfully created scrub-shrub or forested wetland was found during this study. Emergent wetlands on the other hand are easier to construct, quicker to develop and can be successfully created more often than other wetland types. While the goal of "in kind replacement" makes biological sense, practically speaking it is not realistic. Permittees regularly agree to construct scrub-shrub and forested wetlands (as mitigation) but have not shown a willingness to absorb the higher costs and long term commitments necessary to accomplish it. Detailed evaluation of the hydrological conditions of a mitigation site is needed to determine whether the correct hydrology is possible. The planting of large numbers of trees and/or shrubs is needed to create the desired vegetative community. Frequent monitoring over many years and a willingness to make mid course corrections are all examples of the commitments necessary to improve the chances of success.

Like wise, the DEQ has not shown the willingness or the ability to make permittees live up to their commitments and responsibilities.

K) Water Depths and Open Water

Water depths within the vegetated areas of emergent wetlands should be limited to 12 inches. Staff should also limit the amount of open water area within mitigation wetlands.

The study revealed that many mitigation wetlands fail because of too much water. Forty-two percent of the mitigation sites evaluated contained excessive open water. There appear to be two main reasons for the large number of mitigation sites with excessive open water. Permittees fail to adequately study the hydrological conditions of the mitigation site and DEQ staff regularly approve mitigation designs authorizing water depths greater than 12 inches. In fact it is not uncommon for proposed normal water depths of 2, 3 and even 4 feet to be approved.

Emergent wetlands should be designed so that normal water depths range between saturated conditions and 12 inches. While emergent vegetation can become established in water up to 18 inches in depth, it is generally less abundant in water depths ranging from 12 to 18 inches. Emergent vegetation is virtually non-existent in mitigation wetlands where the water exceeds 18 inches in depth. It is also more likely that emergent wetlands designed to contain extremely shallow water (0 to 6 inches) may eventually evolve into scrub-shrub or forested wetlands over time.

For the purposes of this study, open-water was defined as an area of permanent water greater than 18 inches in depth. Areas containing more than 18 inches of water will not develop into emergent wetlands. While open water areas will normally develop submergent vegetation and can add diversity to an emergent wetland, they should be limited in size and not routinely be accepted as adequate mitigation. Large areas of open water (i.e. ponds) should not be acceptable as mitigation for wetland losses.

L) Water Quality Treatment

Mitigation sites should <u>not</u> be used for water quality treatment purposes (i.e. detention, retention or sedimentation ponds).
The study revealed that many mitigation wetlands used to store or treat water from development sites suffered from excessive sediment deposition, poor water quality and sparse vegetation. When mitigation wetlands will be receiving water from developed sites, primary treatment of that runoff water is required prior to outletting into the created wetland. Construction of a retention pond up gradient

of the mitigation wetlands is the recommended method.

M) Water Control Structures

The MDEQ should routinely consider the inclusion of a stop-log water control structure (or equivalent) for every mitigation design and require this if applicable.

The study revealed that approximately 75% of all mitigation sites fail to exhibit the expected hydrological conditions. Hydrological mistakes are the single most significant factor in mitigation failures. The ability to easily manipulate (raise or lower) water levels is a critically important component of a mitigation design.

N) Ninety day Statutory Deadline

The MDEQ should work to eliminate or lengthen the 90-day statutory deadline contained in Part 303.
This deadline negatively impacts staff by placing an arbitrary deadline for action. The statutory deadline requires that MDEQ staff evaluate a proposed wetland project, determine whether a permit can be issued, and then requires the submittal and evaluation of a detailed mitigation plan all within 90 days. In many cases a significant portion of the allotted time is needed to review the application materials and issue a public notice before field staff ever see the application. Failure to take an action within the allotted 90-day period results in automatic permit issuance. In too many situations staff are forced to either issue a permit without sufficient information or deny a project that might otherwise be permitted. Valuable staff time is often wasted trying to get applicants to "voluntarily" withdraw their applications. The statutory deadline serves no useful purpose other than to force MDEQ staff to make premature decisions or issue incomplete permits that cause future compliance and enforcement problems.

O) Mitigation Data Entry

The MDEQ should immediately take appropriate steps to assure that all permitting staff are entering mitigation information into the CIWPIS database at the time of permit issuance.

The MDEQ historically has done an extremely poor job of record keeping and tracking of permits requiring mitigation. In the past, this lack of adequate record keeping and tracking made it very difficult for staff to follow-up on mitigation projects even if they had the time. The absence of accurate record keeping also made designing and implementing this study very difficult and time consuming.

In 1999 the MDEQ made modifications to its CIWPIS database that allows staff to enter mitigation-related data. Staff was directed to routinely enter such information on May 7, 1999. (See Appendix L). Because staff can simply by pass this section of CIWPIS without entering the mitigation data, it is questionable whether all staff are routinely complying with this direction. The MDEQ has also developed and is currently testing a new system to track mitigation projects. Regardless of the system used, compiling complete and accurate mitigation information will require complete cooperation from permitting staff to faithfully enter the data.

P) Location of Mitigation Files

All permit files requiring wetland mitigation should be retained in the appropriate district office until such time that staff have evaluated the mitigation project and certified it as complete and acceptable.
During the study it became very clear that many mitigation files are sent to the records center before the monitoring period has expired or the mitigation project has been inspected and approved by staff. This leads to incomplete files because monitoring reports and other information received or compiled (after the file is sent up) never makes it into the project file. It is also very difficult for staff to follow-up on a mitigation project if the file is not available in their office.

Q) Follow-up Inspections

The MDEQ should place a high priority on follow-up of mitigation projects and direct staff to routinely conduct compliance inspections.

The study revealed that only 1in 4 (26%) mitigation projects is ever followed-up on by DEQ staff. Much of this effort occurs in the northern sections of the state where the number of mitigation projects is small. In southern Michigan where the vast majority of mitigation projects are located, only 6% of mitigation projects receive follow-up.

It is imperative that regulatory staff visit mitigation sites during and immediately after construction. This will demonstrate to the permittee and contractors that their project is being monitored. This is also an ideal time to deal with common problems such as the failure to construct the wetland in accordance with the approved design, failure to place the proper soils, failure to plant the required vegetation and to correct erosion problems.

Staff must then continue to track and monitor each outstanding mitigation project during the entire monitoring period. This effort must include insuring that annual monitoring reports are received and evaluated as well as conducting annual inspections of mitigation sites to insure that the wetlands are developing as expected or that corrective actions are taken as needed. Staff should follow-up on mitigation projects until such time that a project is acceptable to the Department

and can be certified. The long-standing practice of conducting little or no follow up on mitigation projects must end.

R) Alternative Follow-up Methods

The MDEQ should examine alternatives to its current structure that would redistribute the responsibility for following up on mitigation projects to non-permitting staff.
MDEQ field staff with all of their duties (i.e., permitting, contested cases, legislative inquires, pre-application meetings, enforcement, providing information to the public via phone days, etc.), are unable to adequately follow-up on mitigation projects. The additional requirements within the recently promulgated mitigation rules will only exacerbate the current situation.

One option that should be considered includes establishing field positions whose duties are specific to compliance and enforcement activities. These positions could be newly created positions or more likely a redistribution of existing staff's duties. Another option would be to assign follow-up responsibilities for mitigation projects to staff in the Lansing headquarters. Regardless of how its accomplished, the MDEQ must take steps to address the reality that 74% of mitigation projects state-wide and 94% of mitigation projects in southern Michigan receive no follow-up by the DEQ.

S) Mitigation Certification Process

The MDEQ should establish a "mitigation certification" process that includes release of the financial assurances.
The MDEQ currently has no formal process by which mitigation projects are reviewed for final approval and "certified" as complete. Permittees rarely request such a certification and the DEQ rarely if ever goes on record as approving a mitigation project. This will all change now that staff will be routinely obtaining financial assurances from permittees. At some point permittees will request that the department release their financial instruments.

A formal certification process should be developed that requires a permittee to submit a written request for final approval of the mitigation project and release of their financial instrument. Along with that request the permittee should be required to provide documentation that all permit and mitigation requirements have been satisfied. After inspection by MDEQ staff and concurrence that the mitigation project is acceptable, the project would be "certified as complete", the financial instrument released and the department's file officially closed. Any projects not "certifiable" would require follow-up action by DEQ staff.

T) Enforcement Actions

MDEQ staff must take timely and appropriate enforcement actions to provide credibility for the mitigation program.

The study revealed that 14% of permittees fail to even initiate their required mitigation projects. The 78% overall failure rate clearly demonstrates that in addition to those that make no attempt, many others make only token efforts to perform their required mitigation activities. Permittees that fail to comply with mitigation requirements are rarely even contacted by the DEQ let alone faced with enforcement action. The study only identified a few isolated examples where field staff were attempting to obtain compliance.

Taking timely enforcement actions such as collecting on financial assurances and referring cases for civil litigation are critical to obtaining compliance and establishing credibility for the DEQ's mitigation program. The department must clearly demonstrate to the regulated community that failure to fulfill mitigation requirements will not be tolerated. Until such time that the MDEQ demonstrates that mitigation requirements will be taken seriously and enforced, the development community will continue to give them a low priority.

U) Wetland Mitigation Banking

The MDEQ should strongly encourage wetland mitigation banking.

The MDEQ established rules authorizing wetland mitigation banking in December of 1997. Michigan's mitigation banking rules require that replacement wetlands be constructed, monitored for at least one year, and then be approved by the department before the credits can be used to offset permitted losses. The banking program represents a significant improvement over current mitigation practices and has the potential to greatly improve Michigan's overall mitigation program.

To date, only one banking agreement has been approved and these wetland credits are not expected to be available until late 2001 or 2002. During 1998 and 1999 the banking program generated little interest. However, during the past year (2000) the department has received numerous serious inquires and is anticipating that formal banking proposals will be submitted during the coming year.

The MDEQ should take prudent steps to publicize and encourage Michigan's wetland mitigation banking program.