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April 4, 1999

Tom Maki, P.E., Chief Operations Officer
Michigan Department of Transportation
Transportation Building
425 West Ottawa
Post Office Box 30050
Lansing, Michigan 48909

Dear Mr. Maki:

Re: Review of current MDOT Program/Project Management System (P/PMS)

Attached is an executive summary of my observations regrading current use of the department's P/PM system and recommendations for improving MDOT's management of preconstruction planning, scheduling, monitoring and implementation.

Also attached is a copy of the back up notes taken by me during the P/PMS conference with Terry Frake, P.E., Richard Houk, P.E., Dan Belcher, P.E., Germaine Kowatch, and Fran Wresinski on Friday March 26, 1999. These were provided earlier in rough form to Mr. Houk. He and the others attending the conference commented on the rough notes. I then prepared the enclosed materials from the original notes and the comments of the conference group.

Comments of the task force were invaluable in gaining a balanced view of how MDOT's program/project is currently being used and how improvements can be made most effectively.

If you have any questions or would like to discuss the enclosed materials please call me at 1-(517)-772-2537.

enclosures: Executive Summary
Conference Notes
cc: Richard A. Houk, P.E.

Sincerely yours,

Ralph J. Stephenson, P.E.

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April 4, 1999

Executive Summary

MDOT Program/Project Management System (P/PMS)

To: Tom Maki, P.E. Chief Operations Officer
Michigan Department of Transportation
Transportation Building
425 West Ottawa
Post Office Box 30050
Lansing, Michigan 48909

From: Ralph J. Stephenson, P.E. - Consulting Engineer

Outlined below are my primary observations and recommendations regarding how to achieve more effective use of the current P/PMS software in MDOT's preconstruction program and project management. These were prepared in conjunction with the MDOT preconstruction design and support staff listed in the backup notes attached.

01.
I strongly recommend that an ongoing program/project management training and education effort be implemented within the preconstruction and design staff of MDOT. This should be done irrespective of any software improvements made to the P/PMS program currently being used to by MDOT to plan, schedule, monitor and report on preconstruction design work. The training and education program is fundamental to performance improvement and is the key to future excellence in program and project management.

These comments were prompted by the observation that irrespective of the quantity and quality of the tools made available to the preconstruction staff, they still must know how to use these tools effectively if they are to manage their work effectively. As pointed out by Mr. Houk, project and program management concepts are not intuitive to most technical people and they must be trained to use them.

02.
The P/PMS software currently in use does not adequately perform in support of

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April 4, 1999

current program and project management. Some information that is important to properly managing a program or project, and is, or could be, available from the current system has been omitted from the system, or is not being used to accommodate users that are inexperienced or untrained in the techniques of project management.

03.
The P/PM software system should be reorganized to better process and utilize more of the commonly required elements of effective program/project management. These include elements that have been omitted as described in point **02** above. Examples of critical information that is either not available or very difficult to obtain from the current versions of P/PMS include:

a. Float time, the time available for management to schedule task starts and finishes other than early starts and finishes, should be more easily determined and clearly displayed in both narrative and graphic forms.

b. Project status information should be more easily seen and used by project managers to help determine, display, analyze, predict, and improve program and project performance.

c. Financial and resources information should be more readily obtained on demand by project managers to determine, show, analyze, predict, manage and improve financial and resource loading characteristics of their project.

04.
The tasks contained in the current planning template, in my opinion, do not adequately reflect the complexity of the work to be done by the MDOT program and project managers during preconstruction work. There is not adequate detail in the descriptions, nor adequate numbers of tasks to accurately and sufficiently plan, schedule, monitor and manage the program/project work.

Equally important is that present task descriptions are so broad they could easily lead to misunderstanding or underestimating the complexity of the work scope for the activity. Customizing activities comprising a plan of work is not possible by the project manager within the current system. However customizing may be possible

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within the present software program if subset activity descriptions of the major tasks are prepared and made available by a reorganization of the software.

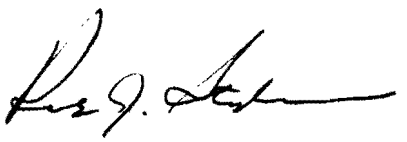
05.
In light of the above comments on the P/PM system, I suggest the support staff and their advisors update the definition of what is expected of the program and project management system. The current P/PMS software package should then be reviewed and analyzed to determine if it can be reorganized and refined to better serve the expectations of the program/project managers and support system.

If a reorganization of the current software will meet the contemporary demands and expectations of MDOT, such a reorganization should proceed immediately. In this case I also recommend holding off on evaluating replacement software until the project management training has a good start. The support staff should then evaluate the planning software available at that time on a continuing and routine basis.

It is to be noted that new commercial software versions are issued so frequently that premature decisions made before being ready to implement the use of a new system may be expensive and waste considerable time and money.

06.
As the improvements noted above are made and the current software system is reorganized, I recommend the current staffing level be maintained at its present level to help initiate the training program and the software reorganization. However staffing levels should be reviewed and analyzed each six months to determine possible increased or decreased staff needs.

07.
With improved use of the software through ongoing training and with reorganization of the current software package a software maintenance contract should be necessary only on an as-needed basis, and ultimately can be phased out completely.



Ralph J. Stephenson, P.E.
Consulting Engineer

MDOT program/ project management conference re P/PMS system

I. Discussion points that must be reviewed if MDOT is to improve the effectiveness of their preconstruction program/project management

The conference group outlined the purpose of the conference by addressing questions posed by Mr. Maki, as well as responding to additional questions generated by the discussion, and to those contained in the scope of work defined for the day. The questions, answers, points discussed, and conclusions are reviewed below in random order.

A. Overview questions that must be answered for improvements to be made
   1. What is expected of the program/project management system?
   2. What is the mission and what are the goals and objectives of the P/PMS support staff customers?
   3. What is the mission and what are the goals and objectives of the P/PMS support staff?
   4. How do we design, improve, or otherwise upgrade the current program/ project management system? (philosophy, culture, approach, cult, methodology, mind set, perception, practice, understanding, etc.) to better do what is expected of the program/project management system?

B. In summary, if project and program management capabilities are to be improved within MDOT, how do we do it?
   1. Define or redefine the current mission, goals and objectives of MDOT particularly the preconstruction design function.
   2. Reorganize the current P/PMS software to better achieve defined missions, goals and objectives of the MDOT preconstruction design function.
   3. Concurrently educate and train present and future project and program managers in the use of the reorganized software and in the techniques of effectively managing programs and projects.

C. How do we match the project & program planning, monitoring & reporting system to the uses expected and to the uses needed?
   1. By defining or redefining what is expected of the project and program management system.
   2. By implementing a dual and concurrent system of software reorganization, and project & program management training and education.

D. Identify barriers to effective implementation of P/PMS and/or similar systems.
   1. Not understanding the importance and value of program/project techniques relative to the value added by good planning.
   2. Inadequate staff training and education in project and program management.
   3. Not adequately understanding the program performance potential of the current P/PMS software.

4. A reduction in the performance capacity of the current P/PMS software to fit an overly simplified concept of program/project management.
5. Misconceptions of the time-effective use of the P/PMS software.
6. Excessive mystery about how the P/PMS software can be most effectively used.
7. Failure to recognize that some unused capacity available within the P/PMS software was omitted to help make the system easier to use for those people not adequately trained in program /project management techniques, principles and systems use. In some cases these omissions might have made the systems of too little use to those more experienced in planning and scheduling design and construction work.
8. General lack of understanding of what program and project information is needed by MDOT, coupled with valid or misplaced perceptions that the amount of work required is not worth the value-added by the work.
9. General reluctance by task-responsible people to be required to share the accountability for getting the design package prepared on time and in accordance with a pre work action plan of action.

E. Should we improve the quality of design project management within MDOT?
   1. Yes! See other points in this back up report for suggestions as to how this might be accomplished.

F. Does the P/PMS system adequately perform in support of project management?
   1. Not as currently being implemented. Some information that is important to properly managing a project and is available from the system has been omitted from the system to accommodate users that are inexperienced or untrained in the techniques of project management.
   2. The system should be reorganized to better accommodate the following elements of project management. (Examples only, full list yet to be developed)
      a) Show float time - the time available for management to schedule the start and finish of the task other than early starts and finishes.
      b) Give more detail re project status - be more easily used by project managers to help determine, show, analyze and improve actual project or program status.
      c) Give more detail re resource and financial information - be more easily used by project managers to determine, show, analyze and improve resource loading and financial characteristics.
      d) Additional elements to be accommodated before starting the detailed reorganization are yet to be determined.

G. Review and comment on the degree to which the project management methodology is taught, practiced, and embraced at MDOT and what changes, if

any, should be made.

1. A full analysis and upgrade should be made of the current program and project management methodology, and the staff orientation and training. This is a prerequisite to fully effective use of any project management software.
2. I have left a copy of the current project management notebook being used by me in the University of Wisconsin Extension Course with Mr. Houk. I suggest this notebook format and material be used to help structure a full education and training and education effort for the MDOT preconstruction program/project management staff.

H. How does P/PMS software compare with similar systems as to the ease of use and training required?

1. P/PMS is a very sophisticated and complex tool that is presently being used only to a small degree of its potential. The program appears to be much more complex to use and maintain than similar software currently on the market.

I. Should we change the name of the planning and scheduling system while still using the current software?

1. Comments from the discussion group
   a) Are we selling an image or are we selling a new system?
   b) If we improve the content and performance of the P/PMS, changing the name and version might work.
   c) Don't try to trick users into believing the new system is different if it isn't.
2. Recommendation - use the names of the identifiable modules within the current software system as a base from which to rename and reorganize the software so it can be used to train and upgrade staff program /project management skills in the use of the modules that exist now, and should be included within the reorganized software system. Software modules needed for proper program/project management include:
   a) Project management check list module - a master list of all activities that might be encountered in an MDOT preconstruction design program or project.
   b) Planning module - a program capable of producing an easily drawn and quantified logic plan
   c) Scheduling module - the various translations that lock tasks into specific time frames
   d) Reporting module - a module that provides enough information to produce a project report containing all data required by MDOT, the system users, and their customers.

e) Graphics module - the graphic translation module that converts technical data into graphic charts and representations.
f) Resource allocation module - a feature that allows resources such as people, money, equipment, time and others to be properly and effectively allocated to the program or project.
g) Monitoring module - contains information and provides the capability to accurately accept program/project status input and provide an evaluation methodology through which the project status can be compared to the performance expected through application of performance standards established by the program/project managers in their planning and scheduling efforts.
h) Cost and financial module - a module that allows input and provides output which accurately depicts the financial structure of the project and its current status relative to the financial performance expected. It should further allow program/project managers to easily obtain pertinent cost and financial data by which the financial condition of the program/project can be determined and corrective action needed taken in a timely manner.
i) Others to be determined?

J. Review the number of tasks in the P/PMS templates and whether those tasks reflect the complexity of the work
   1. The tasks, in my opinion do not adequately reflect the complexity of the work to be done by the MDOT program and project managers. See other discussion points in this section for more comments on this matter.

K. What is the degree of interface required with all areas of the department to properly operate the current system?
   1. The degree of interface is dependent on the needs of the program/project and the ability and experience of the program/project managers. The program/project managers must establish what is needed from other organizational units to successfully manage their projects and programs. All MDOT organizational units are involved in providing information from time to time. It is an important judgment call of the program/project manager to determine when, how, why and who is to be involved in this information collection, and to determine in a timely manner, the nature of the interfaces required.

L. How much is the current system costing MDOT?
   1. Time did not allow such an analysis to be made at this session. However, we must look at the benefits of the system (cost/benefit analysis?) before making a decision as to the true benefits of the system.
   2. Data does not exist at present for determining typical costs of planning MDOT's design work. However these costs might be somewhat similar on

a project irrespective of the software used since they are primarily dependent upon the capabilities of the person preparing the plan of action.

3. MDOT support staff should review the cost to reorganize the current software package to be useful in an updating and improvement of the program/project management and program/project delivery systems.

M. What is the cost in staff time to enter data to keep the current system updated?
   1. A key question must be answered first - Is the information worth the cost of the entry? If not don't make the entry!
   2. The current system, as with all project planning systems, requires good input to provide valid data from which to update a program/project plan of action. The time for inputting actual dates on activities should approximate no more than 2 minutes per entry. If 75 entries are required for one unit for one month this amounts to a time expenditure of about 2 1/2 hours during that month for data entry.
   3. Mr. Houk will review and tabulate the time and cost for an average month across the full range of projects to help define the costs more accurately for the full preconstruction work load.

N. Is the current staffing adequate to provide effective support and training in P/PMS and project management methods?
   1. The staffing will probably have to be reorganized along with the software reorganization to make most effective use of MDOT's program/project management resources.
   2. For the present, reorganization and reuse of the current software system staffing appears to be adequate to properly effect a temporary transition to a better suited project management system.

O. Do we have adequate MDOT staff to maintain and support the existing system without the consultant?
   1. As the improvements noted above are made and the current software is reorganized along with evaluating alternative software solutions, the need may be experienced for some additional internal project management support staffing as use of the system increases. However the quality and value of the deliverables produced by the MDOT preconstruction staff should also greatly improve. The actual amount of internal staff needs cannot be fully estimated presently without considering additional data not available at this session.
   2. I recommend the current staffing level be maintained to help initiate the software reorganization, but be reviewed and analyzed each six months for possible changes.

P. Do the number of activities shown on the template presently accurately depict the complexity of the work?
   1. No.

2. There is not adequate detail in the descriptions, nor adequate numbers of tasks to accurately and sufficiently plan, schedule, monitor and manage the project work.
3. The present task descriptions are very broad and could possibly lead to misunderstanding or underestimating the complexity of the work scope for each. Current descriptions do not allow details of what specific work is to be managed to be shown.
4. Customizing activities comprising the plan of work is not possible by the project manager within the current system.
   a) Customizing of activities may be, and probably is, needed on most projects to effectively manage the project. Customizing consists of building a project activity laundry list that provides adequate detail for the project manager to understand exactly what it is he or she is managing.
   b) Customizing may be possible within the present software program if subset activity descriptions of the major tasks are available.
5. If customizing is to be added in the reorganization, the existing planning module can accommodate this change in the system.

Q. Are we justified in using the present software system?
   1. Based on the points discussed in this analysis, the system can be, and should be, reorganized to better serve an improved project and program management process. This action should be tailored to allow the current software, as reorganized, to better serve both current and long term needs. Software reorganization should be accomplished concurrent with a short, moderate and long term program/project management training program.

R. Do we need an annual maintenance contract?
   1. Now, yes. In the future probably not.
   2. With reorganization of the current software future maintenance should be necessary only on an as-needed basis, and ultimately can be phased out completely.

S. What other project management software is available that might fulfill MDOT needs
   1. Below is a short list of several current software programs, some of which might be suitable substitutes for the current project planning software.
      a) Project planning
         (1) Harvard planner
         (2) MacProject Pro
         (3) Microsoft Project
         (4) Prima Vera
         (5) RPM
         (6) Scitor

(7) Shur Track - module of Prima Vera
(8) Time Line
(9) Visio
(10) Prologue
(11) Artimus
(12) Project Scheduler

b) Project scheduling
(1) Fast track 2.0 - for bar charts
(2) Note that most project planning programs have limited scheduling capabilities.

2. Recommendation - hold off on currently evaluating replacement software, and use a reorganized version of the current system until the project management training has a good start. Then, evaluate the planning software available at that time. New commercial software versions are issued so frequently that premature decisions made before being ready to implement the use of the software may be expensive and waste considerable time and money.

T. Recommend any alternatives to P/PMS, if appropriate, and briefly discuss the costs of any change.
1. A full discussion of this point is not possible until a more comprehensive and updated definition of the desired missions, goals, objectives and operating methods of MDOT preconstruction staff is identified.

II. **Administrative details of conference**
A. Date of conference - Friday March 26, 1999
B. Location - Transportation Building Office, Lansing, Michigan
C. Those attending conference - listed alphabetically
1. Daniel Belcher - P.E., P.S. - Engineering Support Manager - (P/PMS Project Manager)
2. Terry Frake , P.E. - Engineer - Design Services
3. Rich Houk, P.E. - Computer Coordination Supervising Engineer
4. Germaine Kowatch - Office of Quality and Reengineering
5. Ralph J. Stephenson, P.E. - Consulting Engineer
6. Fran Wresinski - Office of Quality and Reengineering

III. **Purposes of conference**
A. To develop appropriate answers to several questions being asked by MDOT management about the current P/PMS project planning system This system is being used to help plan, manage, monitor and report on programs and projects used to produce bidding document needed for construction.
B. To respond to Mr. Thomas Maki's questions listed below.
1. How much is the P/PMS costing?
2. What degree of interfacing is needed to manage projects with P/PMS?

3. What is the number of tasks required to be shown in a project implementation plan for the project to be managed properly?
4. Do we require too many tasks to be shown in the P/PMS process?
5. Do we need an annual maintenance effort to keep P/PMS operating properly?
6. Are we justified in using the P/PMS in the current project management effort?

C. To respond to questions and issues identified as important to the success of the MDOT preconstruction process. These were outlined in the scope of work established for evaluation of the P/PMS.
1. Does the P/PMS system adequately perform in support of project management?
2. Review and comment on the degree to which the project management methodology is taught, practiced, and embraced at MDOT and what changes, if any, should be made.
3. How does P/PMS compare with similar systems as to the ease of use and training required?
4. Recommend any alternatives to P/PMS, if appropriate, and briefly discuss the costs of any change.
5. Is the current staffing adequate to provide effective support and training in P/PMS and project management methods?
6. Review the number of tasks in the P/PMS templates and whether those tasks reflect the complexity of the work.
7. Identify barriers to implementation of P/PMS and/or similar systems.

IV. **Processes and resources needed in order for MDOT to develop an effective project design management system**

We first identified the major processes and methodologies the group felt were essential for any program or project management system to contain to successfully produce projects within MDOT preconstruction operations. The processes and methodologies identified included:

A. A planning process
B. A reporting process
C. A monitoring process
D. A resource allocation methodology
E. A performance measurement methodology
F. An improvement measurement methodology
G. A program management system
H. A project management system
I. A procurement tracking process
J. Clearly defined project and program management steps to follow.

K. Well trained and properly qualified project and program managers
L. An ongoing project management training and education program for all present and future project and program managers.

V. **Glossary of terms - this list is preliminary and should be reviewed and expanded for use by MDOT as needed**

A. Closed system
A system in which there is no import or export of information or physical materials, and in which, therefore, there is no change of components.

B. Deliverables
The end product of an assignment, the work on a project or the work to be done under a contract agreement between two or more parties.

C. Effective
Of a nature that achieves identifiable goals and objectives in accordance with an action plan, and achieves worthwhile peripheral goals through intermediate accomplishments. To do the right things.

D. Efficient
Exhibiting a high ratio of output to input. To do things right.

E. Excessive
Above or greater than an amount specified as being the usual or proper limit or degree by agreement, contract, or custom.

F. Goals
The unquantified desires of an organization or individual expressed without time or other resources assigned. (See objectives for related definitions.)

G. Internal design units - to be defined

H. Mission
A statement of the most important result to be achieved by the project being successfully completed.

I. Objectives
Quantified targets derived from established goals (see goals). The most commonly used resources in converting goals to objectives are money, time, human abilities, human actions, equipment, and space.

J. Open system
A system which exchanges energy, information and physical components with its environments.

K. P/PMS support staff
Those who provide services and resources (deliverables) to their customers so as to accomplish project management training, documentation & improved software usage, all designed to help MDOT do a better job to achieve their mission and objectives.

L. P/PMS support staff customers
Those who are concerned or involved with preparation of the plans, specs & estimates package or those who use the support staff product(support staff deliverable) to prepare, participate in the production of, and/or monitor the plans, specs & estimates package (customer deliverables) used to solicit bids for construction.
   1. Internal design units
   2. Design consultants
   3. Administrative management
   4. Executive management
   5. Responsible & participating units
      Those who provide technical data and information to the internal design units
   6. Regions and Transportation Service Centers
   7. etc.

M. Program - as defining a step in the design process
A narrative oriented statement of the needs and character of the proposed user operation, the requirements of the user and owner, the nature of the environment to be planned, designed and built, and the corresponding characteristics of the space that will satisfy these needs and requirements. Sometimes called the brief.

N. Program - as defining a generic construction effort
A major planning, design, construction, and operational construction effort made up of many projects.

O. Program management
Planning, scheduling, monitoring and managing groups of similar projects all of which make up a program. Similarities include functions, geographic regions, types of facility, etc.?

P. Project - as a set of work actions
A set of work actions having identifiable objectives, and a beginning and an end.

Q. Project - as related to management
A specific management assignment to achieve a set of objectives by accomplishing a group of related, discrete operations which have a defined beginning & end.

R. Project component - as related to organizational management
A group established to achieve a set of objectives by accomplishing a set of related, discrete operations which have a defined beginning & end.

S. Project delivery system
A method of assembling, grouping, organizing & managing project resources so as to best achieve project goals & objectives.

T. Project director
The individual responsible for implementation of several projects upon which his company is engaged.

U. Project management
The art, science and profession of defining, assembling and directing the application of resources so as to profitably execute a work effort that has identifiable objectives, and a well defined beginning and end.

V. Relations - formal functional
Organizational connections that concern distribution and use of data, information and decisions that flow along formally defined transmission lines. Formal functional communications are usually written and are normally both from and to individuals and groups.

Formal relations are precisely defined and most day to day business is accomplished within the formal relation framework. The line expressing a formal functional relation usually has an arrowhead at each end to show a mutual exchange of responsibility and authority. If there is a higher authority to be implied a single arrowhead can be used pointing to the superior party.

W. Relations - informal
The natural channels along which organizationally related material is most easily and comfortably transmitted. The informal relation exists by mutual consent of the parties to the relation, and is stimulated to maximum effectiveness by a mutual profit gained from the relation.

Little, if any, authority normally is expressed in informal relations. Communications are usually oral and one to one. Often informal relations define the hidden organization structure. A line defining an informal relation is usually shown dotted with an arrowhead at each end.

X. Relations - reporting
The official channels through which each individual conveys, or is given raises, appraisals and evaluations; is fired, assigned or is provided professional, vocational and personal identity in the organization. The true organizational superior of an employee is usually that individual with whom he maintains a reporting relation. The line expressing reporting relations has an arrowhead at one end pointing to the superior.

Y. Relations - staff
The business patterns through which a person or group provides consulting services necessary to achieve goals and objectives. Staff personnel usually have

little or no authority over those outside the staff group. The line expressing staff relations has an arrowhead at each end.

Z. Relations - temporary
Those relations created when extraordinary or unusual management demands must be met. The temporary relation is usually unstable and should be kept active for only short periods of time. The line expressing a temporary relation can have an arrowhead at one or both ends depending on the nature of the relations.

Extensive use of temporary relations creates business dysfunctions, breaks down morale and causes internal tensions.

AA. System
An assemblage or combination of things or parts forming a complex or unitary whole.

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF TRANSPORTATION

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JAMES R. DeSANA, DIRECTOR

April 2, 1999

Ralph J. Stephenson, P.E.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, MI 48858-9096

Dear Mr. Stephenson:

Below are our comments on the draft notes from our meeting March 26. Thank you for the opportunity to review and comment on them to insure we have a common understanding of what was discussed.

To begin, I wanted to correct a grammatical error. Tom spells his last name Maki, not Mackie. Secondly, I would like to recommend that your cover letter contain an executive summary. Our feeling is that Tom and our other executives do not have the time to read the report in detail. The points we would like to see from your notes are as follows:

- If implementing a program and project management methodology is desired, it will be necessary to train staff throughly in those concepts. These concepts are not intuitive to most people until they have been trained.
- Reorganize and refine the current software to more fully provide the necessary information to project managers and support staff.
- Hold off on evaluating alternative software replacements and use a reorganized version of the current system until the training of staff in program and project management has a good start. Then, evaluate the software available at that time and determine the best future direction.
- Maintain the current staffing level through the reorganization and refining of the existing software. Then, evaluate reducing the consultant contract. Note that evaluating new software will take resources so consider that when determining whether to reduce the consultant presence.

I think we would like to see a little more consistency in the information. If you recommend a direction, say that. Then, if you want to qualify that recommendation or comment on some issues, do that. I am hoping that you were going to convert this outline into a report, which would take care of the previous comment as you determined how to present the information. The

reason behind our concern is that statements that seem absolute may cause us to follow a direction that even you wouldn't agree with.

Clarifications for attendees titles, etc:
Dan Belcher, *P.E., P.S., Engineering Support Manager (P/PMS project manager)*
Rich Houk, *P.E.,*
Germaine/Fran - *Office of Quality and Reengineering*

Comments on specific items:

VI. B. 1. consider rewording this to something like the following: Not as currently implemented. The system is capable of providing information that has been omitted to simplify the system to accommodate users that are inexperienced and/or untrained in the concepts of project management. For instance, all reports and Gantt charts should contain float to give a true picture of the work. In addition, the system should be reorganized to allow it to be more easily used. Changes such as those mentioned will allow the system to provide the information necessary to suit true project management needs.

VI. D. 1. I do agree with you that in the project management area that there are many better software solutions. However, I am concerned that there are not any software solutions available "out of the box" today that will provide the program level roll up and the centralized administration/security, reporting, etc that our software is capable of (but perhaps not fully using). Does your experience with software and evaluation of software alternatives extend to the program management arena?

VI. G. 1. consider adding "adequately" to the start of the description as follows: The tasks, in my opinion, do not *adequately* reflect the complexity . . .

VI. L. 1. consider adding the following sentences: There is not enough detail. More tasks would be needed in many instances to sufficiently plan, manage, and monitor the work.

VI. M. 2. Since the first paragraph already mentions a future direction of replacing the existing system, consider rewriting the last sentence to read: However, for the present, reorganization and reuse of the current system is adequate.

VI. O. 1. Consider including something concerning the additional staffing needs during the evaluation of alternative software solutions. In addition, consider adding the following sentence at the end of this item as a recommendation if you agree: Therefore, the current staffing level should be maintained, but should be reviewed periodically.

VI. P. 7. Consider rewriting this section as follows: . . . within the P/PMS software that ~~is perceived as not being essential to~~ *was omitted in an attempt to make the system easier to use for those people not sufficiently trained in* performing project . . .

VI. P. 9. Consider adding point 9. as follows: General reluctance of task responsible people to be required to share the accountability of getting the design package prepared on time (performing on a preset schedule).

VI. R. 1. Please omit everything but the software in section IV Project planning and V Project scheduling. In most of the other categories, we have department standards. In addition, please add Project Scheduler to the list of available project planning software.

VI. R. 2. We would really like to see this recommendation in a place of prominence as we discussed previously in the executive summary.

VIII. L. Please move number 6. to the number 1. spot and let the rest fall in their current order.

VIII. N. At the end of the definition, please change " . . . several projects." to " . . . *many* projects.".

If you have any questions or want to discuss any of these points as you review our comments this weekend, please feel free to give me a call. My phone number at home is (517)699-1580.

Sincerely,

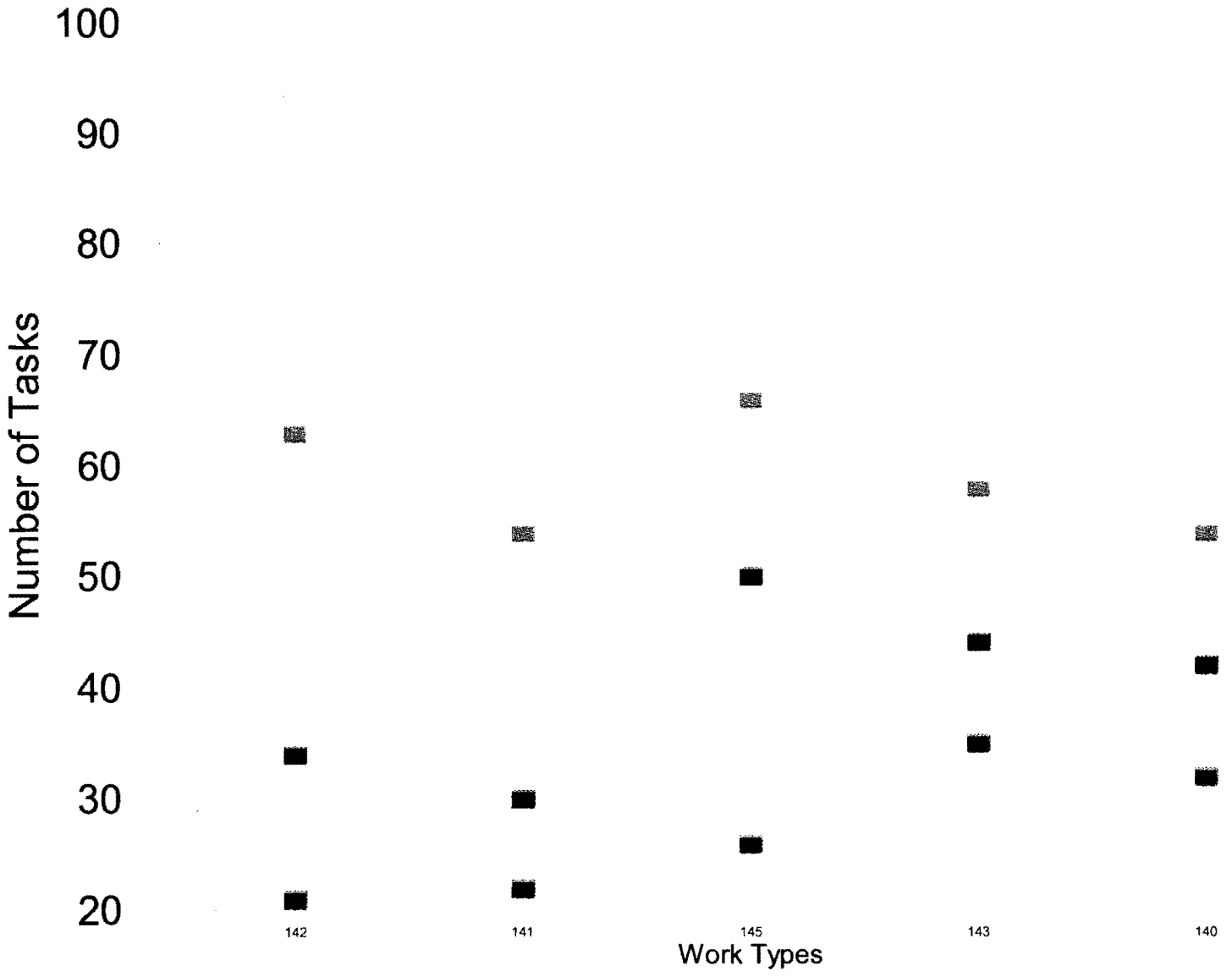
Richard A. Houk

Richard A. Houk
Engineer Manager - Computer Coordination
Design Division

D/RAH

Number of Tasks per P/PMS Network

Resurface/Restore



Yellow - # of tasks on template

Light Blue - Max # of tasks on a job

Dark Blue - Average # of tasks for work type

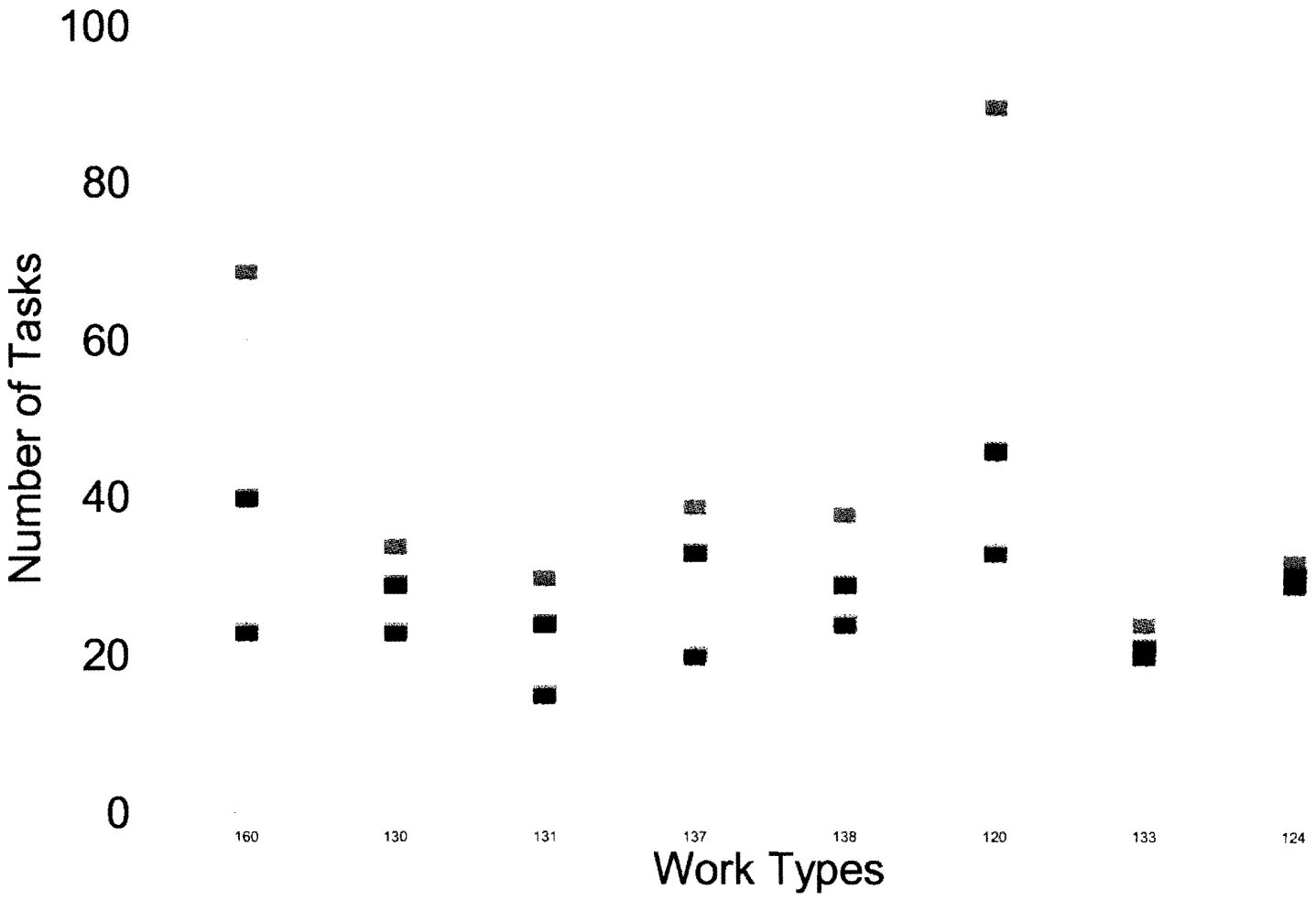
Red - Min # of

142 RESURFACING - MLL AND/OR PULVERIZE
141 RESURFACING AND BITSHOULDERS
145 RESURFACE - MLL AND PULVERIZE AND MNOR WIDENING
143 RESURFACE AND MNOR WIDENING
140 RESURFACING

Work Types having at least 5 jobs from FY 1999 program

Number of Tasks per P/PMS Network

Other types



Yellow - # of tasks on template

Light Blue - Max # of tasks on a job

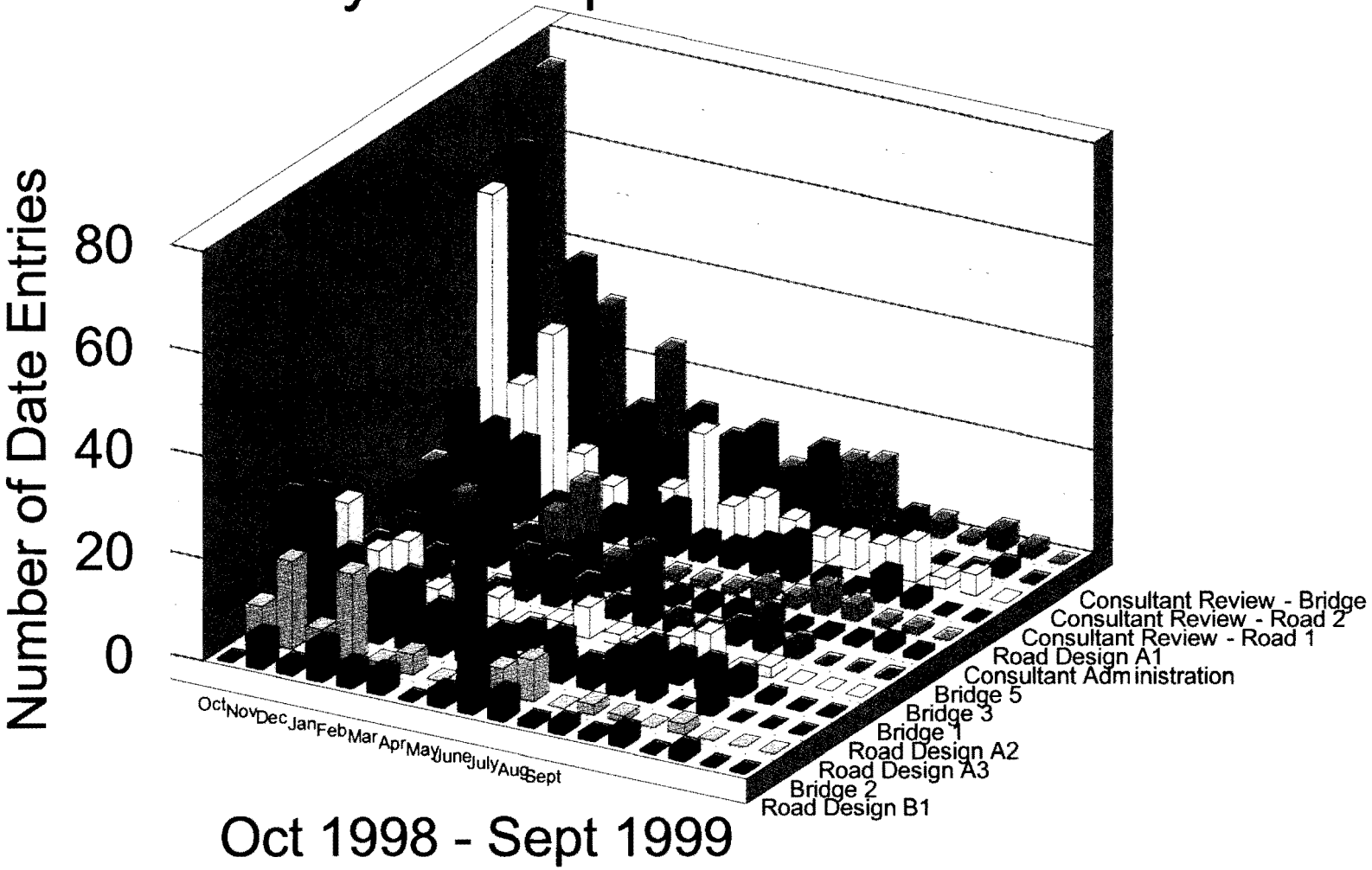
Dark Blue - Average # of tasks for work type

160 RECONSTRUCT EXISTING, NO WIDENING, INCLUDES INTERCHANGE
130 DECK REPLACEMENT
131 OVERLAY
137 SUPERSTRUCTURE REPLACEMENT
138 BRIDGE RECONSTRUCTION - NO ADDED LANES
120 INTERSECTION REVISIONS
133 PAINTING
124 RAILROAD CROSSING IMPROVEMENTS AND SAFETY DEVICES

Work Types having at least 5 jobs from FY 1999 program

Design Squads

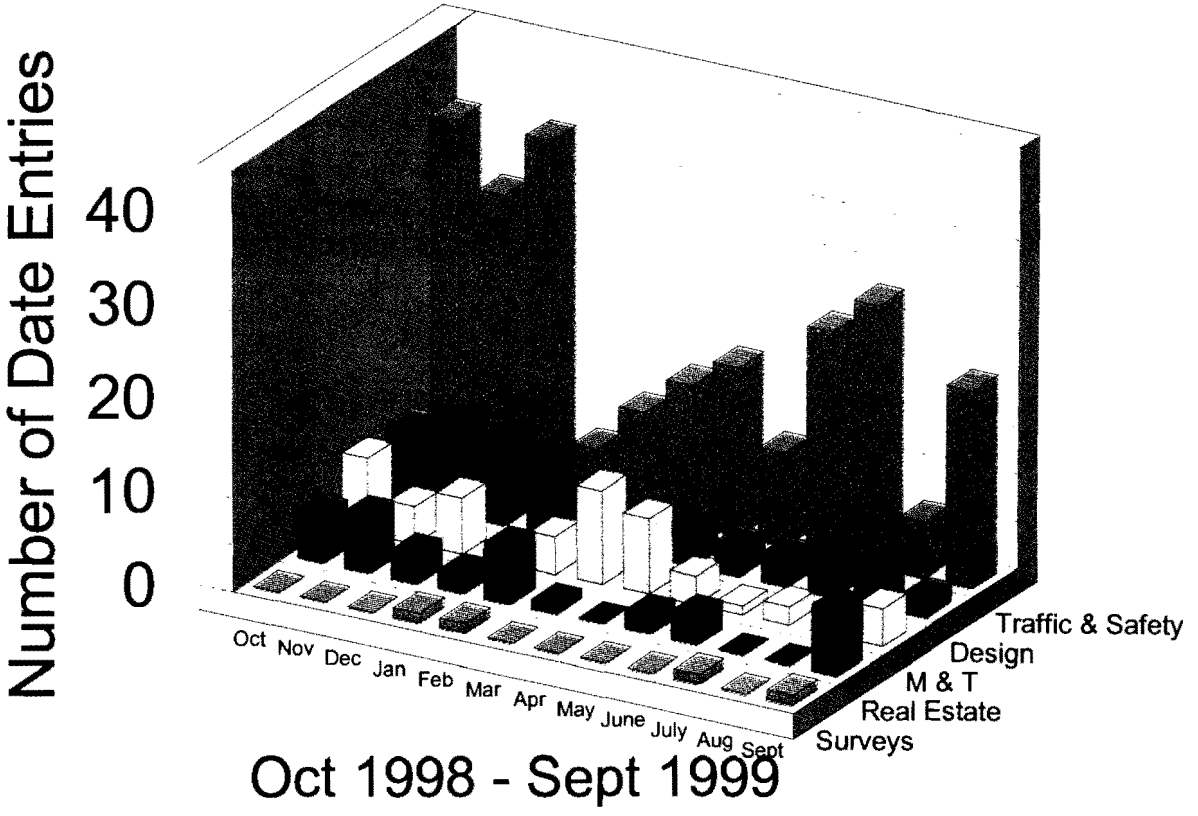
Entry Dates per Month for P/PMS



Oct 1998 - Sept 1999

Metro Region

Entry Dates per Month for P/PMS



Ralph J. Stephenson, P.E.
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ph 517 772 2537
March 29, 1999

Richard A. Houk
Computer Coordination Supervising Engineer
Department of Transportation
Transportation Building
425 West Ottawa
Post Office Box 30050
Lansing, Michigan 48909

Dear Mr. Houk:

Enclosed is a preliminary draft of the notes from the meeting held at your office on Friday March 26, 1999. This copy is being sent to you for your review and comments. I shall assume any further distribution will be made by you. From this draft and your comments I shall prepare the document to be sent to Mr. Tom Mackie as a final report on this one day assignment.

Please note that I have done some rewriting from the original notes but I believe I have maintained the intent and content of the notes we took with the full group.

I am leaving for Iowa City, Iowa Tuesday morning, March 30, 1999. I will be home, according to present plans, on Friday evening, April 2, 1999. If you care to annotate the draft copy and send it back, I shall prepare the final draft next weekend and send it to Mr. Mackie and you.

Meanwhile I shall call Mr. Mackie and set a time when I can talk to him as he desires. However I shall not send out the final report until I get your comments on the rough notes.

Please notice that the questions and issues you mentioned in your scope of work outline for me are folded into the full discussion questions and points. Therefore there is some redundancy in the discussion and responses to the questions and points.

I shall call you on Tuesday March 30, 1999 to see if you have received the notes and to answer any questions you might have about the note material or format.

Meanwhile I would like to thank you and the MDOT staff that participated in the

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March 29, 1999

conference last Friday for the great help you provided in a difficult and complex meeting. The session was enjoyable and I feel will help start a positive process of project and program management improvement within MDOT.

Sincerely yours,

Ralph J. Stephenson, P.E.

enclosure: rough notes from planning conference

Ralph J. Stephenson, P.E.
Consulting Engineer

MDOT conference to discuss the use of the P/PM S software tool in the current management of MDOT preconstruction activities

Note: The information below is preliminary, and is for review and comment by Mr. Richard Houk and other members of the conference team. This copy is being sent to Mr. Houk only and further distribution will be by him.

I. **Those attending - listed alphabetically**
   A. Daniel Belcher - P/PMS staff
   B. Terry Frake , P.E. - Engineer - Design Services
   C. Rich Houk - Computer Coordination Supervising Engineer
   D. Germaine Kowatch
   E. Ralph J. Stephenson, P.E. - Consulting Engineer
   F. Fran Wresinski

II. **Date of conference - Friday March 26, 1999**

III. **Location - Transportation Building Office, Lansing, Michigan**

IV. **Purposes of conference**
   A. To develop appropriate answers to several questions being asked by MDOT management about the current P/PMS project planning system This system is being used to help plan, manage, monitor and report on programs and projects used to produce bidding document needed for construction.
   B. Mr. Thomas Mackie outlined the general mission of the conference as being to provide preliminary answers to the following questions.
      1. How much is the P/PMS costing?
      2. What degree of interfacing is needed to manage projects with P/PMS?
      3. What is the number of tasks required to be shown in a project implementation plan for the project to be managed properly?
      4. Do we require too many tasks to be shown in the P/PMS process?
      5. Do we need an annual maintenance effort to keep P/PMS operating properly?
      6. Are we justified in using the P/PMS in the current project management effort?
   C. To respond to questions and issues identified as important to the success of the MDOT preconstruction process. These were outlined in a scope of work for evaluation of the P/PMS.
      1. Does the P/PMS system adequately perform in support of project management?
      2. Review and comment on the degree to which the project management methodology is taught, practiced, and embraced at MDOT and what changes, if any, should be made.
      3. How does P/PMS compare with similar systems as to the ease of use and training required?

4. Recommend any alternatives to P/PMS, if appropriate, and briefly discuss the costs of any change.
5. Is the current staffing adequate to provide effective support and training in P/PMS and project management methods?
6. Review the number of tasks in the P/PMS templates and whether those tasks reflect the complexity of the work.
7. Identify the barriers to the implementation of P/PMS and/or similar systems.

V. **Processes and resources needed in order for MDOT to develop an effective project design management system**

We first identified all the processes and methodologies the group felt were essential for any project or program management system to contain in order to use to successfully produce projects within MDOT operations. The processes and methodologies included:

A. A planning process
B. A reporting process
C. A monitoring process
D. A resource allocation methodology
E. A performance measurement methodology
F. An improvement measurement methodology
G. A program management system
H. A project management system
I. A procurement tracking process
J. Clearly defined project and program management steps to follow.
K. Well trained and properly qualified project and program managers
L. An ongoing project management training and education program for all present and future project and program managers.

VI. **Questions that must be answered if MDOT is to improve their project and program management systems effectiveness**

The conference group outlined the purpose of the conference by addressing the questions posed by Mr. Mackie, as well as responding to additional questions generated by the discussion and to those contained in the scope of work defined for the day. The answers and responses are reviewed below in somewhat random order.

A. The overview questions
   1. What is the mission and what are the goals and objectives of the P/PMS support staff customers?
   2. What is the mission and what are the goals and objectives of the P/PMS support staff?
   3. How do we design, improve, or otherwise upgrade the current project & program management (philosophy, culture, approach, cult, methodology,

mind set, perception, practice, understanding, etc.)?

B. Does the P/PMS system adequately perform in support of project management?
   1. Not as presently being used. The system should be reorganized to suit true project management needs.

C. Review and comment on the degree to which the project management methodology is taught, practiced, and embraced at MDOT and what changes, if any, should be made.
   1. A full analysis and upgrade should be made of the current project management methodology and staff orientation and training. This is a prerequisite to fully effective use of any project management software.
   2. I have left a copy of the current project management notebook being used at the University of Wisconsin Extension Course with Mr. Houk. I suggest this notebook format and material be used to help structure a full education and training and education effort for the MDOT project and program management staff.

D. How does P/PMS compare with similar systems as to the ease of use and training required?
   1. It is a very sophisticated and complex tool that is being used only to a small degree of its potential. However the program appears to be much more complex to use and maintain than similar software currently on the market.

E. Should we change the name of the planning and scheduling system?
   1. Comments from the discussion group
      a) Are we selling an image or are we selling a new system
      b) If we improve the content and performance of the P/PMS, changing the name and version might work
      c) Don't try to trick the users into believing the new system is different if it isn't.
   2. Recommendation - use the names of the identifiable modules within the current software system as a base from which to rename and reorganize the modules so they can be used to train and upgrade staff project and program management skills in the use of the modules that exist now and should exist within the reorganized software system. Software modules needed include:
      a) Project management check list module
      b) Planning module - quantified logic plan
      c) Scheduling module
      d) Reporting module
      e) Graphics module
      f) Resource allocation module

g) Monitoring module
h) Cost module
i) Other?

F. How do we match the project & program planning, monitoring & reporting system to the uses expected and to the uses needed?
   1. By defining or redefining what is expected of the project and program management system.
   2. By implementing a dual and concurrent system of software reorganization, and project & program management training and education.

G. Review the number of tasks in the P/PMS templates and whether those tasks reflect the complexity of the work
   1. The tasks, in my opinion do not reflect the complexity of the work to be done by the MDOT program and project managers. See other discussion points in this section for more comments on this matter.

H. What is the degree of interface required with all areas of the department to properly operate the current system?
   1. The degree of interface is dependent on the ability and experience of the project and/or program manager. They must establish what is needed from other organizational units to successfully manage their projects and programs. All MDOT organizational units are involved in providing information from time to time. It is an important judgment call of the project manager to determine when, how much, and who is to be involved in this information collection, and to determine the nature of the interfaces required.

I. How much is the current system costing MDOT?
   1. This cost is a statistical element that may always be perceived as being excessive. We must look at the benefits of the system (cost/benefit analysis?) before making a decision as to the true benefit of the system. Time did not allow such an analysis to be made at this session.
   2. Data does not exist at present for typical costs of planning MDOT's design work. However these costs might be similar on a project irrespective of the software used since they are primarily dependent upon the capabilities of the person preparing the plan of action.
   3. MDOT should review the cost to reorganize the current software package to be useful in an updating and improvement of the project management and project delivery system.

J. What is the cost in staff time to enter data to keep the current system updated?
   1. The current system, as with all project planning systems, requires good input to provide valid data from which to update the project plan of

action. The time for inputting actual dates on activities should approximate no more than 2 minutes per entry. If 75 entries are required for one unit for one month this amounts to a time expenditure of about 2 1/2 hours during that month for data entry.

2. A key question - Is the information worth the cost of the entry? If not don't make the entry!
3. Mr. Houk will tabulate the time and cost for an average month across the full range of projects to help define the costs more accurately for the full work load.

K. Is the current staffing adequate to provide effective support and training in P/PMS and project management methods?
   1. The staffing may have to be reorganized along with the software reorganization to make most effective use of MDOT's project and program management resources.
   2. This staffing item needs more study than was possible in the one day conference.

L. Do the number of activities shown on the template presently accurately depict the complexity of the work?
   1. No.
   2. The present task descriptions are very broad and could possibly lead to misunderstanding or underestimating the complexity of the work scope for each. Current descriptions do not allow the details of what specific work is to be managed to be shown.
   3. Customizing activities comprising the plan of work is not possible by the project manager within the current system.
      a) Customizing of activities may be, and probably is, needed on most projects to effectively manage the project. Customizing consists of building a project activity laundry list that provides adequate detail for the project manager to understand exactly what it is he or she is managing.
      b) Customizing may be possible within the present software program if subset activity descriptions of the major tasks are available.
   4. If customizing is desirable the existing planning module can accommodate this change in the system.

M. Are we justified in using the present software system?
   1. Based on the points discussed in this analysis, the system can be and should be reorganized to better serve an improved project and program management process. This action should be tailored to allow the current software, as reorganized, to better serve both current and long term needs. Reorganization should be accomplished concurrently with short,

moderate and long term project and program management training program.

2. Replacing the basic software system may be advisable over a period of time as project management is effectively utilized. However for the present, reorganization and reuse of the current system should be adequate as a temporary transition process.

N. Do we need an annual maintenance contract?
   1. Now, yes. In the future probably not.
   2. With reorganization of the current software the maintenance should be necessary only on an as-needed basis, and ultimately can be phased out completely.

O. Do we have adequate MDOT staff to maintain and support the existing system without the consultant?
   1. As the improvements noted above are made and the software is reorganized, the need for increased internal project management support may grow as use of the system increases. However the quality and value of the deliverables produced by the MDOT preconstruction staff should also greatly improve. The actual amount of internal staff needs cannot be estimated without considering additional data not available at this session.

P. Identify the barriers to the implementation of P/PMS and/or similar systems.
   1. Not understanding the importance and value of program and project planning relative to the value added by good planning.
   2. Inadequate staff training and education in project and program management.
   3. Not adequately understanding the program performance potential of the P/PMS software.
   4. A reduction in the performance capacity of the P/PMS software to fit overly simplified concept of project and program management.
   5. Misconceptions of the time effective use of the P/PMS software.
   6. Excessive mystery about how the P/PMS software can be most effectively used.
   7. Unused capacity available within the P/PMS software that is perceived as not being essential to performing project and program management activities.
   8. General lack of understanding of what information is needed by MDOT, coupled with valid or misplaced perceptions of excessive work not worth the value-added by the work.

Q. Should we improve the quality of design project management within MDOT?
   1. Yes!

R. What other project management software is available that might fulfill MDOT needs
   1. Below is a list of several current software programs, some of which might be a suitable substitute for the current project planning software.
      I. Data base
         A. Flat file - Used for individual files not related to each other.
            1. Claris Works
            2. Filemaker Pro
            3. Microsoft File
            4. Microsoft Works
            5. Excel
         B. Relational data base - Used where files must be interrelated. One entry appears in all related file locations.
            1. 4D
            2. Approach
            3. D Base
            4. Fox File
            5. Helix
            6. Microsoft Access
            7. Paradox
            8. Quatro
            9. File maker Pro
            10. Rbase
            11. Microsoft SQLServer
            12. Oracle
      II. Estimating
            1. Timberline
            2. Means
            3. National Estimator
            4. MC Squared
      III. Graphics
            1. MacDraft - Claris
            2. MacDraw - Claris
            3. MacPaint
            4. Auto Cad
            5. Micro Station
            6. Mini Cad
            7. Intergraph
            8. Corel Draw
            9. Visio Technical
            10. Paint Shop Pro

11. Adobe Photo Shop
12. Adobe Illustrator
13. Soft CAD
14. Data CAD
15. 3D MAX
16. Architectural desk top & building services - Autocad

IV. Project planning
1. Harvard planner
2. MacProject Pro
3. Microsoft Project
4. Prima Vera
5 RPM
6. Scitor
7. Shur Track - module of Prima Vera
8. Time Line
9. Visio
10. Prologue
11. Artimus

V. Project scheduling
1. Fast track 2.0 - for bar charts
2. Many project planning programs have scheduling capabilities

VI. Specialized word processors
1. MORE
2. Others are usually found on late versions of conventional word processors

VII. Spread sheets
1. Claris Works
2. Excel
3. Fox Pro
4. Lotus 1, 2, 3
5. Microsoft Works
6. Quatro Pro

VIII. Word processors
1. AMI Pro-Lotus
2. MacWrite Pro-Claris - for MacIntosh
3. Microsoft Word - Microsoft
4. Word Perfect
5. Word Star

2. Recommendation - hold off on evaluating replacement software and use a reorganized version of the current system until the project management training has a good start. Then evaluate the planning software available at

that time. New commercial software versions are issued so frequently that premature decisions made before being ready to implement the use of the software may be expensive and waste considerable time and money.

S. Recommend any alternatives to P/PMS, if appropriate, and briefly discuss the costs of any change.
   1. A full discussion of this point is not possible until a more comprehensive definition of the missions, goals, objectives and operating methods of MDOT preconstruction staff is identified.

T. If project and program management capabilities are to be improved within MDOT, how do we do it?
   1. Define or redefine the current mission, goals and objectives of MDOT.
   2. Reorganize the current P/PMS software to better achieve defined missions, goals and objectives of MDOT.
   3. Concurrently educate and train present and future project and program managers in the use of the reorganized software and in the techniques of effectively managing programs and projects.

VII. **Abbreviations - list to be expanded**
   A. P/PMS - Program/Project Management System
   B. TSC - Transportation Service Centers
   C. Etc. to be continued

VIII. **Glossary of terms - this list should be reviewed and expanded for use by MDOT as needed**
   A. Closed system
      A system in which there is no import or export of information or physical materials, and in which, therefore, there is no change of components.
   B. Deliverables
      The end product of an assignment, the work on a project or the work to be done under a contract agreement between two or more parties.
   C. Effective
      Of a nature that achieves identifiable goals and objectives in accordance with an action plan, and achieves worthwhile peripheral goals through intermediate accomplishments. To do the right things.
   D. Efficient
      Exhibiting a high ratio of output to input. To do things right.
   E. Excessive
      Above or greater than an amount specified as being the usual or proper limit or degree by agreement, contract, or custom.
   F. Goals
      The unquantified desires of an organization or individual expressed without time or other resources assigned. (See objectives for related definitions.)
   G. Internal design units - to be defined

H. Mission
A statement of the most important result to be achieved by the project being successfully completed.

I. Objectives
Quantified targets derived from established goals (see goals). The most commonly used resources in converting goals to objectives are money, time, human abilities, human actions, equipment, and space.

J. Open system
A system which exchanges energy, information and physical components with its environments.

K. P/PMS support staff
Those who provide services and resources (deliverables) to their customers so as to accomplish project management training, documentation & improved software usage, all designed to help MDOT do a better job to achieve their mission and objectives.

L. P/PMS support staff customers
Those who are concerned or involved with preparation of the plans, specs & estimates package or those who use the support staff product(support staff deliverable) to prepare, participate in the production of, and/or monitor the plans, specs & estimates package (customer deliverables) used to solicit bids for construction.
   1. Internal design units
   2. Design consultants
   3. Administrative management
   4. Executive management
   5. Responsible & participating units
      Those who provide technical data and information to the internal design units
   6. Regions and Transportation Service Centers
   7. etc.

M. Program - as defining a step in the design process
A narrative oriented statement of the needs and character of the proposed user operation, the requirements of the user and owner, the nature of the environment to be planned, designed and built, and the corresponding characteristics of the space that will satisfy these needs and requirements. Sometimes called the brief.

N. Program - as defining a generic construction effort
A major planning, design, construction, and operational construction effort made up of several projects.

O. Program management
Planning, scheduling, monitoring and managing groups of similar projects all of which make up a program. Similarities include functions, geographic regions, types of facility, etc.?

P. Project - as a set of work actions
A set of work actions having identifiable objectives, and a beginning and an end.

Q. Project - as related to management
A specific management assignment to achieve a set of objectives by accomplishing a group of related, discrete operations which have a defined beginning & end.

R. Project component - as related to organizational management
A group established to achieve a set of objectives by accomplishing a set of related, discrete operations which have a defined beginning & end.

S. Project delivery system
A method of assembling, grouping, organizing & managing project resources so as to best achieve project goals & objectives.

T. Project director
The individual responsible for implementation of several projects upon which his company is engaged.

U. Project management
The art, science and profession of defining, assembling and directing the application of resources so as to profitably execute a work effort that has identifiable objectives, and a well defined beginning and end.

V. Relations - formal functional
Organizational connections that concern distribution and use of data, information and decisions that flow along formally defined transmission lines. Formal functional communications are usually written and are normally both from and to individuals and groups.

Formal relations are precisely defined and most day to day business is accomplished within the formal relation framework. The line expressing a formal functional relation usually has an arrowhead at each end to show a mutual exchange of responsibility and authority. If there is a higher authority to be implied a single arrowhead can be used pointing to the superior party.

W. Relations - informal
The natural channels along which organizationally related material is most easily and comfortably transmitted. The informal relation exists by mutual consent of the parties to the relation, and is stimulated to maximum effectiveness by a mutual profit gained from the relation.

Little, if any, authority normally is expressed in informal relations. Communications are usually oral and one to one. Often informal relations define the hidden organization structure. A line defining an informal relation is usually shown dotted with an arrowhead at each end.

X. Relations - reporting
The official channels through which each individual conveys, or is given raises, appraisals and evaluations; is fired, assigned or is provided professional, vocational and personal identity in the organization. The true organizational superior of an employee is usually that individual with whom he maintains a reporting relation. The line expressing reporting relations has an arrowhead at one end pointing to the superior.

Y. Relations - staff
The business patterns through which a person or group provides consulting services necessary to achieve goals and objectives. Staff personnel usually have little or no authority over those outside the staff group. The line expressing staff relations has an arrowhead at each end.

Z. Relations - temporary
Those relations created when extraordinary or unusual management demands must be met. The temporary relation is usually unstable and should be kept active for only short periods of time. The line expressing a temporary relation can have an arrowhead at one or both ends depending on the nature of the relations.

Extensive use of temporary relations creates business dysfunctions, breaks down morale and causes internal tensions.

AA. System
An assemblage or combination of things or parts forming a complex or unitary whole.

STATE OF MICHIGAN

JOHN ENGLER, GOVERNOR

DEPARTMENT OF TRANSPORTATION

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JAMES R. DeSANA, DIRECTOR

March 9, 1999

Ralph J. Stephenson
323 Hiawatha Dr.
Mt. Pleasant, MI 48858-9096

Dear Mr. Stephenson:

Enclosed is a proposed scope of work for your one day visit to MDOT. I realize we will not be able to go into any significant depth on all the questions/issues. However, I would like to visit each to at least determine some next steps as these are questions and issues important to our management as they decide the future of P/PMS. In addition, please feel free to refine or add to the list as your experience and expertise helps us to evaluate P/PMS.

I currently have approval for $1,100 for your one day visit plus a couple of hours for generating the report. From our phone conversation, I gathered that this was a high end estimate, with billing based on actual hours worked. If I have misunderstood the costs, please update me with a new fee schedule so I can determine if I need to seek approval for a new amount. Upon completion of the visit and delivery of the report, we will process payment based on your invoice.

Also enclosed is a map to one of our parking areas. There is a fee of $0.50 per hour for this lot. You will then have to walk a couple blocks to the main entrance for our building. This entrance is located off Ottawa directly across from Chestnut Street. Proceed up to the lobby and up to the second floor. Also attached is a sketch to help you locate my office.

If you have <u>any</u> questions concerning the enclosures or anything else, or if you feel you would benefit from more information up front, please feel free to contact me at (517)335-2182 or Dan Belcher at (517)373-1959.

Sincerely,

Richard A. Houk

Richard A. Houk
Computer Coordination Supervising Engineer

Scope of Work for Evaluation of P/PMS by Ralph Stephenson

The Program / Project Management System (P/PMS) is the project management software tool the Department of Transportation has developed to assist in managing the preconstruction process (conception thru letting).

History

- Functional Specifications, Proposal Review, and Implementation support was competitively bid and awarded on Oct. 1, 1990 to Roy Jorgensen Associates. This contract was amended and lasted through August 1994.
- System design, programming, manual creation, training, and implementation was competitively bid and was awarded in June 1993 to Robbins-Gioia, Inc.
- A fully functional P/PMS system was delivered in Oct 1994 on time and within budget.
- Since then, the maintenance has been performed on a sole source basis through contracts with Robbins-Gioia, Inc. The contractors billing rate has increased less than 3.5% per year within each classification.

Questions/Issues

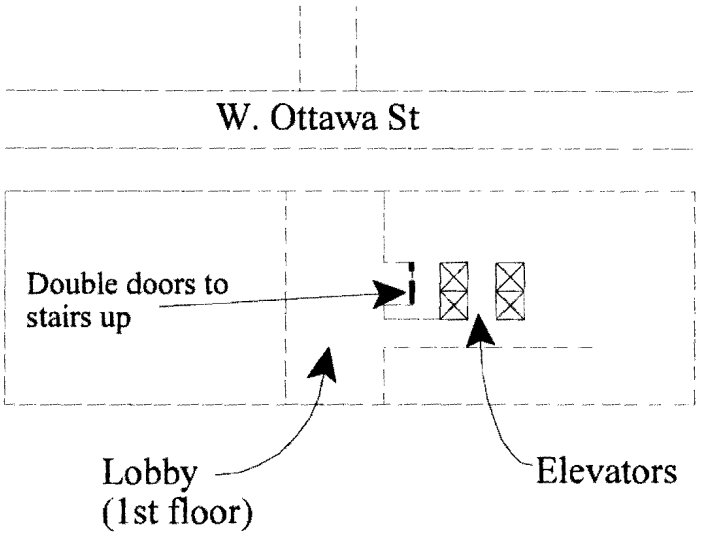
- Does the P/PMS system adequately perform in support of project management?
- Review and comment on the degree to which the project management methodology is taught, practiced, and embraced at MDOT and what changes if any should be made.
- How does P/PMS compare with similar systems as to ease of use and training required?
- Recommend any alternatives to P/PMS, if appropriate, and briefly discuss the costs of any change.
- Is the current staffing adequate to provide effective support and training in P/PMS and project management methods.
- Review the number of tasks in the P/PMS templates and whether those tasks reflect the complexity of the work. (see attachments giving a brief insight to the job templates)
- Identify the barriers to the implementation of P/PMS and/or similar systems.

Deliverable

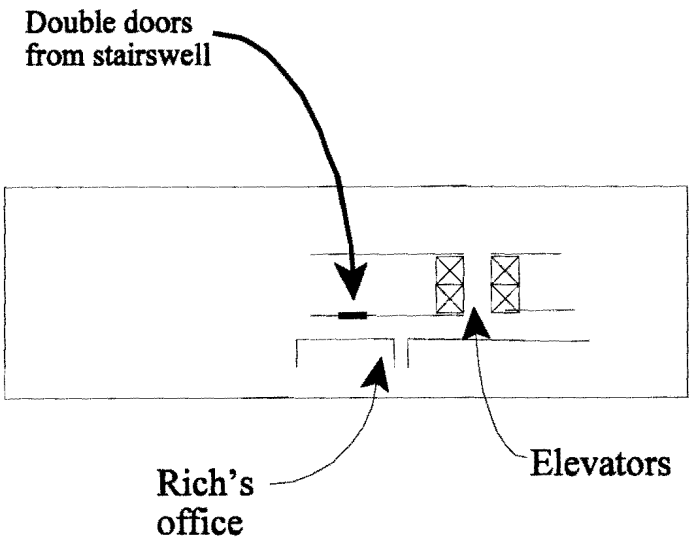
1) One day on-site visit to become familiar with the P/PMS product and the environment at MDOT. Agenda for the visit:

9:00am	Demo of P/PMS
10:00am	Review of training available relative to project management
10:30am	Open discussion
11:45am	Lunch (1 hour)
5:00pm	adjourn

2) Written report answering the questions/issues above if possible. If not, recommend next steps to address any open question or issue. This report to be delivered within one week of the on-site visit.



1st floor (actually ½ a floor above street level)



2nd floor

In any case, if you can't find me, stop in the first office you can find and give me a call. I'll come and get you.