Ralph J. Stephenson, P. E., P. C.
Consulting Engineer

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer

Huron Water Supply projects program - d394 - copied to cof dpw plnng 1 - 394

I. General information

A. Cost center manager roster

1. Staff
   a) 0310 - Administration - Fred Watts (fdw)
   b) 0314 - Accounting - Mattie Jones (mjo)
2. Utilities division
   a) 0391 - Water administration - vacant
   b) 0392 - Water office - Booker Houston (bho)
   c) 0393 - Water service center - Randy McConnell (rmc)
   d) 0394 - Water plant and facilities - John Weisenberger (jww)
   e) 0395 - Water pollution control facility - Roy Zietz (raz)
3. City engineer
   a) 0311 - City Engineer - vacant
   b) 0312 - Engineering division - Mike Mansfield (mgm)
   c) 0372 - Traffic engineering - Don Berry (deb)
   d) 0321, 0322, 0323, 0324 - Building and safety inspection - Jim Brady (jbr)
   e) 0340 - Building maintenance - Kevin Mackey (kma)
   f) 0381 - Waste collection - Dennis Owens (dow)
   g) 0361 - Street maintenance - Jeff Bye (jby)

B. CIP work responsibilities of cost center managers

1. 0310 - Administration - Fred Watts (fdw)
2. 0311 - City Engineer - vacant
   a) cip project management.
3. 0312 - Engineering division - Mike Mansfield (mgm)
   a) ROW projects in City of Flint.
      (1) Street repair.
      (2) Bridge maintenance and repair.
   b) Sidewalk replacement program.
   c) Flood control project with Corps of Engineers.
   d) Geographic Information System implementation and maintenance.
4. 0314 - Accounting - Mattie Jones (mjo)
   a) Tracking fixed assets.
   b) DPW cip contract administration
5. 0321, 0322, 0323, 0324 - Building and safety inspection - Jim Brady (jbr)
   a) Weed abatement (vacant lot cleanup).
   b) Building demolition.
6. 0340 - Building maintenance - Kevin Mackey (kma)
   a) Maintenance of city hall properties.
7. 0361 - Street maintenance - Jeff Bye (jby)
   a) Maintaining and repairing streets and sidewalks.
   b) Sweeping streets.
   c) Removing snow & ice.
   d) Patching potholes .
8. 0372 - Traffic engineering - Don Berry (deb)
   a) Signal maintenance.
   b) Street signing.

c) Traffic control
d) Street light maintenance.

9. 0381 - Waste collection - Dennis Owens (dow)
   a) Scheduled pick up.
   b) Bulk pick up.
10. 0391 - Water administration - vacant
   a) Replace billing system (cis - customer information system).
   b) Negotiating contracts for water and sewer systems for the city.
   c) Storm water management
   d) Utilities division automation (mjl project manager for this project).
   e) cip project management.
11. 0392 - Water office - Booker Houston (bho)
   a)
12. 0393 - Water service center - Randy McConnell (rmc)
   a) Distribution improvements.
   b) Sewer maintenance.
      (1) Root control.
      (2) Grease and oil.
      (3) Spill response.
   c) Water distribution and collection system model. (gis and Hardy Cross).
13. 0394 - Water plant and facilities - John Weisenberger (jww)
   a) High priority projects are
      (1) Plant rehabilitation.
      (2) COD DWSD negotiations.
      (3) Lake Huron pipeline.
      (4) Dam rehabilitation.
      (5) Safety compliance.
   b) See cip list for other projects
14. 0395 - Water pollution control facility - Roy Zietz (raz)
   a) See cip list for other project.
   b) High priority projects are
      (1) NPDES (National Pollution Discharge Elimination System) permit updates
         (a) 503 regulations (USEPA).
         (b) Surface water quality (MDNR).
         (c) Storm water management.
      (2) Automation of
         (a) Wet side.
         (b) Third Avenue pumping station.
      (3) Safety compliance.

C. Abbreviations

1. arl - Action Request Letter
2. cip - Capital Improvements Program
3. DPW - Department of Public Works
4. fdw - Fred D. Watts, Jr.
5. FWP & F - Flint Water Plant & Facilities
6. fy - Fiscal year - from July 1, through June 30
7. jww - John W. Weisenberger

8. mgm - Mike G. Mansfield
9. mjl - Mike J. Lunn
10. O & M - Operations and maintenance
11. rjs - Ralph J. Stephenson
12. WPC - Water Pollution Control

D. Glossary of terms

1. Action request letter
   A document requesting action on DPW related matters often concerning cip projects. ARL paragraphs are standard and usually include the following:
   - Action requested.
   - Background.
   - Budget impact.
   - Steps following positive action.
   - Consequences of negative action.
2. Boiled water incident
   A point in time where the MDPH requires all water for human consumption be boiled before use. Has a special negative impact on the hospitals relative to the cleanliness of all equipment and clothing used in the hospital. Also has negative impact on bottling companies and on all public restaurants.
3. Phase 1 upgrade work design
   Work that will further enhance the operation and product of the existing facility as of April 12, 1994.
4. Phase 1 required work design
   Work that is needed now to prevent the issuance of a boiled water notice (incident). See glossary for definition of boiled water incident.
5. Concept design
   A basis of final design used to set standards for the entire service area including a Lake Huron inlet through to delivery of potable water to the customer's tap. Encompasses a total design and construction period from April 12, 1994 through the year 2001.
6. Capital Improvement Program
   The total plan of improvements to DPW facilities that are actually to be included and executed within in each fiscal year's budget period.
7. Capital improvements
   Improvements to DPW facilities that are to be included in each fiscal year's budget.
8. CIP book
   A data base layout from the cip data file containing both narrative and data fields displayed in a narrative format.

   The cip book is the reference book of information used to prepare action requests and other cip project related documents.
9. CIP master data file
   A data base file containing all capital improvement information for the current fiscal year, and for the succeeding five years displayed so as to allow detailed planning and scheduling of the cip work. The cip data file contains all information fields required for producing the cip summary data file and the cip book.

   It is designed for use by all levels of management , and will include the following

information:

a) Project number - The first four digits of the project number will be the cost center designation. The last three designations will be the order in which Mr. Lunn has listed the cost center projects in his initial tabulation.
b) Project name
c) Fund
d) Cost center
e) Cost center priority - ratings, ranking, values, weights
   (1) (1) Current project - continuation funding requirements.
   (2) (2) New prioritized - funding required.
   (3) (3) Funding is not a current fiscal year issue.
f) Impetus type
   (1) (1) I. Regulatory compliance
   (2) (2) II. Economic savings projected
   (3) (3) III. Potential litigation/safety
   (4) (4) IV. Obsolescence
   (5) (5) V. Contract expiration
g) Fiscal year funding requested & amount.
h) Fiscal year funding to be expended & amount.
i) Fiscal year funding actually expended & amount.
   (1) Impetus - why are we planning to do this project?
j) Project background - brief narrative project history and rationale for doing.
k) Benefits of project - narrative
l) Funding sources - statistical - (how does this differ from the fund above?)
m) Short and long term consequences - narrative
n) Citizen comments on project related matters - narrative
o) Regulatory needs for information - narrative
p) Political needs for information - narrative
q) Resources needed
   (1) (1) Internal staff
   (2) (2) Internal consultants
   (3) (3) External consultants
   (4) (4) Other
r)) Resources available
   (1) (1) Internal staff
   (2) (2) Internal consultants
   (3) (3) External consultants
   (4) (4) Other

10. CIP summary data file
    A line item file containing all information fields most frequently required for operating reference by cost center managers, the DPW Director, and the DPW staff. It usually will not contain the narrative information fields included in the cip book.
11. Cost center
    A division or subdivision of DPW that has its own budget. Each cost center has its own identifying number. The funding for projects comes from the cost center budget assigned to it.

12. Cost center managers
13. DPW CIP (Overview) Committee
    The temporary task force assigned the responsibility for planning and monitoring capital improvement program projects, and planning and monitoring operations and maintenance projects.
14. Impetus
    An impelling force. The driving push and motivation for doing the project successfully.
15. Impetus type
    The nature of the events that caused the cost center manager to include the project in the cip. Will be be used to help set the cost and timing of the projects.
    a) I. Regulatory compliance
    b) II. Economic savings projected
    c) III. Potential litigation/safety
    d) IV. Obsolescence
    e) V. Contract expiration
16. Operations costs
17. Maintenance costs
18. Planning
    Establishing and arranging necessary and desired actions leading to end, intermediate and peripheral objectives.
19. Precis
    A concise summary of the essential facts or statements.
20. Precis notebook
    Book containing summaries of all projects - to be furnished to all cost center managers. Now called the CIP file. (03/30/94).
21. Priority
    Taking precedence in importance or value.
22. Program - as defining a total environmental effort
    A major environmental construction effort made up of several projects.
23. Project
    A specific management assignment to achieve a set of objectives by accomplishing a group of related, discrete operations which have a defined beginning & end.
24. Project schedule
    A graphic or written tabulation of project activities showing where the activities are to start and finish. The schedule is derived from the plan of action and the network model by locking the tasks and the resources they require into a specific time position.

II. Date of meeting - Monday, October 11, 1993

A. Location - Flint water treatment plant conference room - Flint, Michigan

B. Time of meeting - 08:30 AM to 12:00 noon and 01:00 pm to 05:00 pm

C. Those attending

1. Fred Watts, Jr., P. E. - Director Department of Public Works - in meeting A. M. only
2. Mike Mansfield, P. E. - DPW Project Engineer
3. Mike Lunn - WPC Operations Supervisor
4. Bob Carlyon - Assistant Supervisor FWP&F - substituting for John Weisenberger
5. Ralph J. Stephenson, P. E.

D. Those involved in program

1. DPW cost centers

a) Staff
   (1) 0310 - Administration - Fred Watts
   (2) 0314 - Accounting - Mattie Jones
b) Utilities division
   (1) 0391 - Water administration - vacant
   (2) 0392 - Water office - Booker Houston
   (3) 0393 - Water service center - Randy McConnell
   (4) 0394 - Water plant and facilities - John Weisenberger
   (5) 0395 - Water pollution control facility - Roy Zietz
c) City engineer
   (1) 0312 - Engineering division - Mike Mansfield
   (2) 0372 - Traffic engineering - Don Berry
   (3) 0321, 0322, 0323, 0324 - Building and safety inspection - Jim Brady
   (4) 0340 - Building maintenance - Kevin Mackey
   (5) 0381 - Waste collection - Dennis Owens
   (6) 0361 - Street maintenance - Jeff Bye
d) DPW Overview Committee
   (1) Mike Lunn - WPC Operations Supervisor
   (2) Mike Mansfield- DPW Project Engineer
   (3) John Weisenberger - FWP&F Plant Supervisor
   (4) Bob Carlyon - Assistant Supervisor FWP&F - sat in for John Weisenberger at October 11, 1993

III. **Date of meeting - Wednesday, March 30, 1994 (notes edited in accordance with Mr. Watts comments of April 20, 1994).**
   A. **Location - Flint water treatment plant conference room - Flint, Michigan**
   B. **Time of meeting - 08:00 AM to 12:00 noon and 01:00 pm to 05:00 pm**
   C. **Those attending**
      1. John Weisenberger - FWP&F Plant Supervisor
      2. Mike Mansfield, P. E. - DPW Project Engineer - am only
      3. Mike Lunn - WPC Operations Supervisor - am only
      4. Ralph J. Stephenson, P. E.
   D. **Agenda**
      1. √ Begin modeling how to best proceed on the water plant & facilities expansion.
   E. **Reference material available**
      1. Capital Improvement Forms (fun form). (Will obtain from Mike Lunn)
      2. Decision trees for water plant expansion.
      3. Records of previous water plant expansion planning efforts. (very bulky - are in rjs files)

IV. **Date of meeting - Tuesday, April 12, 1994**
   A. **April 12, 1994 - 11:28:00 AM**
   B. **Location - DPW city hall conference room &Flint water treatment plant conference room - Flint, Michigan**
   C. **Agenda items to discuss at meeting on Tuesday, April 12. 1994**
      1. Review content of previous meeting on March 30, 1994
      2. Discuss procedures desired on cip program file and its use.

D. Those attending

1. Fred Watts, Jr., P. E. - Director Department of Public Works - early A. M. only
2. John Weisenberger - FWP&F Plant Supervisor
3. Mike Mansfield, P. E. - DPW Project Engineer - A. M. only
4. Randy McConnell - Water Service Center - A. M. only (name added later)
5. Bob Carlyon - Assistant Supervisor FWP&F -A. M. only
6. Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants - A. M. only
7. Ralph J. Stephenson, P. E.

E. Resume of A. M. meeting

1. Started meeting at 9:18 A. M. with Mr. Watts reviewing what he expects from the design contract execution for the proposed rehab, upgrading, and concept design of plant 2 and the total new Lake Huron supply by MPS.
   a) COF DPW is to plan the work in conjunction with MPS but to maintain a monitoring and planning system that primarily serves the City of Flint and the Water Plant staff needs.
   b) Wants MPS to resubmit proposal to reflect a cap on the work of $500,000 during the initial phase, called Phase 1, of concept and design.
   c) Wants COF staff and MPS to determine the scope of work best contained in the $500,000 fee.
      (1) Mr. Watts primary need is a concept design that can be used to technically provide a standard of performance over the period from now through 2001, the approximate expiration date of the current contract for water from DWSD.
      (2) The remaining part of the fee within the $500,000 cap is to be used for work mutually considered desirable by COF water staff and MPS, all subject to Mr. Watts review and MDPH approval.
      (3) The total package for this $500,000 cap work is to be submitted to City Council for approval. It therefore must encompass adequate work to satisfy Council that the program adds value to the COF water services to its customers.
2. Two important ingredients of the phased work is to take into account regulatory change requirements and technology change influences on the full program of work.
3. Phase 1 scope of work.
   a) The Phase 1 design fee is to result in three main components as its work product.
      (1) Concept design for total concept design that provides a standard of water improvement action from now through 2001, the approximate expiration date of the current contract for water from DWSD.
      (2) Required-work design to preliminary approval or to start of construction.
      (3) Upgrade design work to preliminary approval or to start of construction.
   b) What the City of Flint is buying in Phase 1 (scope options)
      (1) For $500,000 - option A - preliminary design to approval for preparing construction documents
         (a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
         (b) Required-work design work to preliminary approval
         (c) Upgrade design work to preliminary approval.

(2) For $530,000 - option B - full design for required to start of construction and upgrade to preliminary approval.
  (a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
  (b) Required-work design to start of construction.
  (c) Upgrade design work to preliminary approval.
(3) For $600,000 - option C - full design for required and upgrade to start of construction.
  (a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
  (b) Required-work design work to start of construction.
  (c) Upgrade design work to start of construction.

4. Phase 1 design time
  a) Option A - option A - preliminary design to approval for preparing construction documents - $500,000 total.
    (1) Concept design for total concept design that provides a standard of water improvement action from now through 2001
      (a) 10 weeks design + 8 weeks COF and agency review + 2 weeks of float = 20 weeks total (assume 14 weeks into concept design can start required & upgrade design).
    (2) Required-work design work to preliminary approval
      (a) 13 weeks + 4 weeks COF and agency review = 17 weeks
    (3) Upgrade design work to preliminary approval
      (a) 13 weeks + 4 weeks COF and agency review = 17 weeks
  b) Option B - full design for required to start of construction and upgrade to preliminary approval - $530,000 total.
    (1) Concept design for total concept design that provides a standard of water improvement action from now through 2001.
      (a) 10 weeks design + 8 weeks COF and agency review + 2 weeks of float = 20 weeks total (assume 14 weeks into concept design can start required & upgrade design).
    (2) Required-work design work to preliminary approval
      (a) 13 weeks + 4 weeks COF and agency review = 17 weeks
    (3) Upgrade design work to start of construction
      (a) Preliminary design - 13 weeks + 4 weeks COF and agency review = 17 weeks
      (b) Final design - 9 weeks + 9 weeks COF and agency review = 18 weeks.
  c) Option C - full design for required and upgrade to start of construction - $600,000 total.
    (1) Concept design for total concept design that provides a standard of water improvement action from now through 2001 - 20 weeks total.
      (a) 10 weeks design + 8 weeks COF and agency review + 2 weeks of float = 20 weeks total (assume 14 weeks into concept design can start required & upgrade design).
    (2) Required-work design work to start of construction - 35 weeks.
      (a) Preliminary design - 13 weeks + 4 weeks COF and agency review = 17 weeks
      (b) Final design - 9 weeks + 9 weeks COF and agency review = 18 weeks.

(3) Upgrade design work to start of construction - total 35 weeks
(a) Preliminary design - 13 weeks + 4 weeks COF and agency review = 17 weeks
(b) Final design - 9 weeks + 9 weeks COF and agency review = 18 weeks.

5. Phase 1 cost of design work.
a) What the City of Flint is buying in Phase 1 (scope options)
(1) For $500,000 - option A - preliminary design to approval for preparing construction documents
(a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
i) Total - $80,000
(b) Required-work design work to preliminary approval
i) Preliminary - $330,000? too much?
(c) Upgrade design work to preliminary approval
i) Preliminary - $90,000.
(2) For $530,000 - option B - full design for required to start of construction and upgrade to preliminary approval.
(a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
i) Total - $80,000
(b) Required-work design to start of construction.
i) Preliminary - $330,000? too much?
ii) Final - $30,000? enough?
(c) Upgrade design work to preliminary approval.
i) Preliminary - $90,000
(3) For $600,000 - option C - full design for required and upgrade to start of construction.
(a) Concept design for total concept design that provides a standard of water improvement action from now through 2001
i) Total - $80,000
(b) Required-work design work to start of construction.
i) Preliminary - $330,000? too much?
ii) Final - $30,000? enough?
(c) Upgrade design work to start of construction.
i) Preliminary - $90,000
ii) Final - $70,000

6. Phase 1 construction costs - see MPS proposal - Attachment B - dated March 17, 1994.
7. Phase 1 construction time - expand plant under option C will take approximately 2 years.
8. General observations
a) Savings from various options.
(1) Using option C ($600,000) could save as much as $1,000,000 in design and construction costs compared to using option A. Estimated by GS B, JWW, RJS.
(a) Saving in construction mobilization - reduces number of mobilizations to one in place of two.
(b) Savings in construction time - allows construction on required and upgrade work to proceed concurrently and to begin at the same time.

(c) May save in increasing size of total contract amount.
(d) Saving in design field administration & construction inspection.
(e) The sooner the upgraded plant is on line the quicker the COF water costs from DWSD will be reduced, and earnings will accrue the COF.

V. Date of meeting - Wednesday, April 20, 1994

A. Early A. M. meeting - 08:30 am to 10:00 am

1. Those attending
   a) Fred D. Watts, Jr., P. E. - Director Department of Public Works
   b) Ralph J. Stephenson, P. E. - Project Management Consultant
2. Agenda
   a) Discuss responsibilities of cip overview committee.
   b) Discuss work to be done by rjs.
   c) Discuss operating method of cip overview committee.

B. Late A. M. meeting and P. M. meeting - 10:30 am to 03:45 pm

1. Those attending
   a) John Weisenberger - FWP&F Plant Supervisor
   b) Ralph J. Stephenson - Project management consultant
2. Agenda
   a) Discuss and formulate preliminary information format suited for cip data storage, retrieval, monitoring, updating and reference use by the Director, cost center managers, DPW staff, and other interested parties.
   b) Discuss course of action being followed for planning of water treatment expansion program
3. Format of cip master data file information fields
   a) Project number - The first four digits of the project number will be the cost center designation. The last three digits will be the order in which Mr. Lunn has listed the cost center projects in his initial tabulation. Should be shown in both the cip summary data file and the cip book.
      (1) Is not shown in either cip summary data file nor the cip book. Should be added to cip summary data file & cip book in manner described above.
   b) Project name - Is shown in both cip summary data file and the cip book. Should rename the descriptor in the cip book.
   c) Fund - Shown as separate number in the cip summary data file. Is shown in cip book , but needs to be given better identification as a data field.
   d) Cost center - Shown as separate number in the cip summary data file and in cip book.
   e) Cost center priority - ratings, ranking, values, weights. Shown in cip summary data file as separate field. Not now shown in the cip book. Should show in cip book.
      (1) Current project - continuation funding requirements.
      (2) New prioritized - funding required.
      (3) Funding is not a current fiscal year issue.
   f) Impetus types - Now shown in cip summary data file as separate field. (what is Arabic numeral preceeding the Roman numeral?). Not shown in the cip book. Should show in cip book.
      (1) Regulatory compliance
      (2) Economic savings projected

(3) Potential litigation/safety
(4) Obsolescence

g) Fiscal year funding requested & amount - Now shown in both cip summary data file & cip book.
h) Fiscal year funding to be expended & amount- Now shown in both cip summary data file & cip book.
i) Fiscal year funding actually expended & amount- Not now shown in either cip summary data file nor the cip book. Should show in both.
j) Impetus narrative - why are we planning to do this project? Not shown in either cip summary data file nor the cip book. Should show in cip book.
k) Project background - brief narrative project history and rationale for doing. Not shown in either cip summary data file nor the cip book. Should show in cip book.
l) Benefits of project - narrative - Shown in the cip book as benefits or impact. Not shown in cip data summary.
m) Other data fields to be discussed and added as appropriate.
(1) Funding sources - statistical - (how does this differ from the fund above?)
(2) Short and long term consequences - narrative
(3) Citizen comments on project related matters - narrative
(4) Regulatory needs for information - narrative
(5) Political needs for information - narrative
(6) Resources needed
(a) Internal staff
(b) Internal consultants
(c) External consultants
(d) Other
(7) Resources available
(a) Internal staff
(b) Internal consultants
(c) External consultants
(d) Other
(8) Pro's of taking project action
(9) Con's of taking project action
(10) Pro's of not taking project action
(11) Con's of not taking project action

4. General notes:
a) Action request letter discussion
(1) The action request letter (arl) should be generated by direct use of the cip book narrative file. This means the fields in the cip book narrative should match the ARL paragraphs. Can this be done?
(2) ARL paragraphs are standard and include the following:
(a) Action requested.
(b) Background.
(c) Budget impact.
(d) Steps following positive action.
(e) Consequences of negative action.
(3) The current cip book contains the following paragraphed information.
(a) Description
(b) Separate sheet for equipment listings

(c) Needs addressed by the project
(d) Benefits or impact - in one field (should this be revised to read positive impact in one field and negative impact in a second field?)
(e) Negative results if not done - short & long term - in one field
(f) Alternatives to funding this project (should this read Funding Alternatives for This Project?).

(4) The combination of items to allow direct transfer from the cip book to the action request letter should include consideration of the following fields of information:
(a) Action requested.
(b) Background.
(c) Budget impact.
(d) Steps following positive action.
(e) Consequences of negative action.
(f) Description (change to action request letter [ARL] & description)
(g) Equipment listings (keep as field in data file for other uses than ARL)
(h) Needs addressed by the project (change to action request letter [ARL] history and background)
(i) Benefits or impact (change to ARL budget impact)
(j) Pro's of doing the project action.
(k) Con's of doing the project action.
(l) Pro's of not doing the project action.
(m) Con's of not doing the project action

VI. Date of meeting - Thursday, April 21, 1994

A. Thursday, April 21, 1994 - 08:30 to 08:55 am - time rjs attended

B. Cost center manager's meeting

C. Those attending

1. Fred Watts - Director
2. Mattie Jones - Accounting
3. John Weisenberger - Water plant and facilities
4. Don Berry - Traffic engineering
5. Roy Zietz - Water pollution control facility
6. Mike Mansfield - Engineering division
7. Jim Brady - Building and safety inspection
8. Dennis Owens - Waste collection
9. Booker Houston - Water office
10. Jeff Bye - Street maintenance
11. Kevin Mackey - Building maintenance
12. Ralph J. Stephenson - Project management consultant

VII. Date of meeting - Tuesday, May 10, 1994 - 8:41:10 AM

A. Individual cost center manager's meetings re capital improvements program budget.

B. Location of meetings - DPW conference room

VIII. Date of meeting - Thursday, June 16, 1994 - 10:10:04 AM

IX. Date of meeting - Friday, June 17, 1994

A. Late P. M. - 10:31:45 AM

1. Location of meeting - Water plant office
2. Date of meeting - Friday, June 17, 1994
3. Those attending
   a) John Weisenberger -
   b) Ralph J. Stephenson - Consultant
4. General notes
   a) Met with mps & mpdh on June 8, 1994
   b) Agenda of meeting - see separate sheet
   c) Meeting requested by fwa
   d) Wanted to have the meeting at 11:00 AM
   e) jwe set meeting for 9:00 AM
   f) fwa reviewed material discussed and then left.
   g) fwa came back at 11:00 AM and discussed material decided on.
   h) fwa made some decision changes
5. Order from the MDPH mandating that Flint rehabilitate & reactivate plant #2 to provide and establish reliability according to the Safe DrinkingWater Act of 1986 from the Federal EPA. Essentially this is phase 1 of the raw water Lake Huron supply plan.
6. Phase 1 - plant #2 rehabilitation
7. Phase 2 - anticipates meeting maximum day capacity of 72 mgd of treated Lake Huron water. Plant expansion includes the construction of a new addition or additions to contain most of the new functions - probably will contain the following.
   a) New high service pump station
   b) New filter room
   c) New administration office
   d) New maintainence shop
   e) New operations center
   f) New heating plant
   g) New emergency generator plant
   h) New transfer pump station
8. Phase 3 - final phase of Lake Huron supply system. Contains the following facilities and equipment:
   a) Intake piping and crib in Lake Huron.
   b) Lakeshore pump station
   c) 56 miles of pipeline from Lake Huron to the present 72" line at the Genesee/Lapeer county line where the City of Flint takes ownership of the existing line serving Flint and Genesee County
   d) Construction of a booster station located halfway up the hydraulic gradient from Lake Huron. Near elevation of 780'.

X. Date of meeting - Wednesday, July 6, 1994 - 8:56:36 AM - All non-water notes

XI. Date of meeting - Wednesday, July 6, 1994 - 2:05:56 PM

A. Date of meeting - Wednesday, July 6, 1994 - 2:05:56 PM

B. Location of meeting - COF Water Plant

C. Those attending

1. John Weisenberger - Superintendent Water Treatment Pla nt & Facilities.

2. Ralph J. Stephenson - Consultant

D. Agenda

1. Update LHWS network as required.
2. Consider preparing summary network model for entire project.
3. Consider translating decision tree into today's framework.
4. √Monitor Lake Huron Water (LHWS) supply network model for MPS activities
5. √Evaluate current status of Lake HuronWater Supply project. work

E. General notes

1. Phase 1 work
   a) **Required work** covered under MPS contract as define in Attachment B dated April 13, 1994. The following is for concept drawings only!
      (1) $ 760,000 - Contract general conditions
      (2) $ 1,575,000 - Pumping Station #4 improvements
      (3) $ 0 - Recarbonization basin modifications
      (4) $ 0 - Ozonation basin and equipment
      (5) $ 0 - Flocculation basin modifications
      (6) $ 0- Flow channel modifications
      (7) $ 0 - Clarifier modifications
      (8) $ 2,035,000 - Filtration system modifications
      (9) $ 0 - Low service pumping station
      (10) $ 3,900,000 - Intermediate service pumping station
      (11) $ 50,000 - Laboratory modifications
      (12) $ 900,000 - Yard piping improvements
      (13) $ 500,000 - Chemical feed equipment
      (14) $ 600,000 - Electrical modifications
      (15) $10,320,000 - Sub total for required modifications -
      (16) $ 980,000 - Contingency
      (17) $11,300,000 - Estimated total construction cost for required work only that is covered in MPS Attachment B. Only covers concept design - no construction working documents included.
         (a) The MPS fee for the required work a bove is not to exceed $491,750. This is the amount authorized by City Council in MPS current change order from the Lake Huron study.
   b) **Upgrade work** not yet under contract with MPS as defined in Attachment B dated April 13, 1994.
      (1) $ 350,000 - Contract general conditions
      (2) $ 0 - Pumping Station #4 improvements
      (3) $ 70,000 - Recarbonization basin modifications
      (4) $ 1,700,000 - Ozonation basin and equipment
      (5) $ 960,000 - Flocculation basin modifications
      (6) $ 1,055.000 - Flow channel modifications
      (7) $ 240,000 - Clarifier modifications
      (8) $ 0 - Filtration system modifications
      (9) $ 360,000 - Low service pumping station
      (10) $ 0 - Intemediate service pumping station
      (11) $ 0 - Laboratory modifications
      (12) $ 0 - Yard piping improvements

(13) $ 0 - Chemical feed equipment
(14) $ 0 - Electrical modifications
(15) $ 4,735,000 - Sub total for required modifications -
(16) $ 465,000 - Contingency
(17) $ 5,200,000 - Estimated total construction cost for required work only that is covered in MPS Attachment B. Covers design from end of concept through completion of construction of Phase 1.
(a) The MPS fee for the required work a bove is not to exceed $568,250 to end of construction.
(b) Total phase 1 construction cost = $16,500,000
(c) Total phase 1 engineering cost = $ 1,060,000
(d) Total phase 1 costs = $17,560,000

2. Phase 2 work
Anticipates meeting maximum day capacity of 72 mgd of treated Lake Huron water. Plant expansion includes the construction of a new addition or additions to contain most of the new functions - probably will contain the following.
a) New high service pump station
b) New filter room
c) New administration office
d) New maintainence shop
e) New operations center
f) New heating plant
g) New emergency generator plant
h) New transfer pump station
3. Phase 3 work
Final phase of Lake Huron supply system.
a) Intake piping and crib in Lake Huron.
b) Lakeshore pump station
c) 56 miles of pipeline from Lake Huron to the present 72" line at the Genesee/Lapeer county line where the City of Flint takes ownership of the existing line serving Flint and Genesee County
d) Construction of a booster station located halfway up the hydraulic gradient from Lake Huron. Near elevation of 780'.
e) Modifications of existing 72" pipeline at the plant, and intersection of Baxter & Potter Roads.

XII. Date of meeting - Friday, July 15, 1994 - 1:47:54 PM

A. Date of meeting - Friday, July 15, 1994 - 1:47:54 PM

B. Location of meeting - COF Water Plant

C. Those attending

1. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
2. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities - in meeting part time
3. Ralph J. Stephenson - Consultant

D. Agenda

1. Discuss summary of work for cip findings and recommendations with John Weisenberger.
2. Prepare summary network model for entire project.

3. √Review work phases with Bob Carlyon.
4. √Discuss and list assumptions for program direction.
5. √Update LHWS network as required.
6. √Set method of planning the work.

E. Water Supply Reliability (Lake Huron Water Supply) program direction - assumptions

1. The LHWS is currently to occupy a first priority planning position with the DPW and utilities staff work.
2. Hans Kuhlmann, as the Deputy Director, will be the project management consultant's contact for the work on the LHWS.
3. MPS involvement was initially (report dated March, 1993) to determine the best long range supply of drinking water to the community (this work is complete). Alternatives included were:
   a) Lake Huron raw water supply, treated at the rehabilitated COF plant.
   b) Construct Detroit second pipeline.
4. MPS involvement under their current proposed change order is to proceed on their recommended alternative through Phase 1 required work concept design
   a) MPS scope of work currently funded under the cip includes (to be verified)
      (1) Preparation of documents for Phase 1 including conceptual design, treatment facility preliminary design, and treatment facility final design, all for required-work needed to rehabilitate Plant 2. No final design for Phase 1 upgrade-work, nor any construction engineering for Phase 1 required-work or upgrade-work, are funded in the current change order.
         (a) Phase 1 work includes:
            i) **Required-work** - as defined in Attachment B dated April 13, 1994.
               (1) $ 760,000 - Contract general conditions
               (2) $ 1,575,000 - Pumping Station #4 improvements
               (3) $ 0 - Recarbonization basin mods
               (4) $ 0 - Ozonation basin and equipment
               (5) $ 0 - Flocculation basin modifications
               (6) $ 0- Flow channel modifications
               (7) $ 0 - Clarifier modifications
               (8) $ 2,035,000 - Filtration system modifications
               (9) $ 0 - Low service pumping station
               (10) $ 3,900,000 - Intermediate service pump station
               (11) $ 50,000 - Laboratory modifications
               (12) $ 900,000 - Yard piping improvements
               (13) $ 500,000 - Chemical feed equipment
               (14) $ 600,000 - Electrical modifications
               (15) $10,320,000 - Subtotal for required modifications
               (16) $ 980,000 - Contingency
               (17) $11,300,000 - Estimated total construction cost for required-work only as defined in MPS Attachment B.
                  (a) The MPS fee for the Phase 1 required-work above is not to exceed $491,750. This is the amount authorized by City Council in MPS current change order from the Lake Huron study.

ii) **Upgrade-work** - as defined in Attachment B dated April 13, 1994.
- (1) $ 350,000 - Contract general conditions
- (2) $ 0 - Pumping Station #4 improvements
- (3) $ 70,000 - Recarbonization basin mods
- (4) $ 1,700,000 - Ozonation basin and equipment
- (5) $ 960,000 - Flocculation basin modifications
- (6) $ 1,055.000 - Flow channel modifications
- (7) $ 240,000 - Clarifier modifications
- (8) $ 0 - Filtration system modifications
- (9) $ 360,000 - Low service pumping station
- (10) $ 0 - Intermediate service pump station
- (11) $ 0 - Laboratory modifications
- (12) $ 0 - Yard piping improvements
- (13) $ 0 - Chemical feed equipment
- (14) $ 0 - Electrical modifications
- (15) $ 4,735,000 - Sub total for required mods
- (16) $ 465,000 - Contingency
- (17) $ 5,200,000 - Estimated total construction cost for upgrade-work only that is covered in MPS Attachment B. Includes design from end of concept through completion of construction for Phase 1.
  - (a) The MPS fee for the upgrade-work final design, and all construction engineering is not funded under the current change order.
  - (b) An additional $568,250 is needed for completion of all MPS work under Phase 1, to end of construction.

iii) Totals for Phase 1 design and construction.
- (1) Total Phase 1 construction cost opinion $16,500,000
- (2) Total Phase 1 engineering cost $ 1,060,000
- (3) Total Phase 1 rehab costs $17,560,000

5. Ralph J. Stephenson as the project management consultant is to provide a means of obtaining a scheduling plan that will serve as an oversight management tool to the City of Flint as the project proceeds.

F. Planning objectives

1. Phase 1
   a) Planning meeting - middle of month
      (1) Those expected to attend planning meetings for Phase 1
         (a) John Weisenberger
         (b) Hans Kuhlmann
         (c) Bob Carlyon
         (d) Trevor Wagonmaker - MPS
         (e) Randy McConnell - only as needed
         (f) Ralph J. Stephenson
      (2) Purpose of Phase 1 planning meetings
         (a) To prepare summary and detailed network models of all Phase 1 work to be done by MPS and the City of Flint.

(b) To monitor and discuss current progress of Phase 1 work measured against the plans and schedules.
(c) To update Phase 1 work as required by progress and project monitoring.

b) Progress meetings - last week of month
(1) Those expected to attend progress meetings for Phase 1
(a) John Weisenberger
(b) Hans Kuhlmann
(c) Bob Carlyon
(d) Trevor Wagonmaker - MPS
(e) Ralph J. Stephenson
(2) Purpose of Phase 1 progress meetings
(a) For MPS to submit and review and revise, if required, a progress report to the COF for preparation of Council referral report. This report is due to Council the first Council meeting of the month.

2. Phase 2 and 3
a) Planning meeting - middle of month
(1) Those expected to attend planning meetings for Phases 2 and 3
(a) John Weisenberger
(b) Hans Kuhlmann
(c) Bob Carlyon
(d) Trevor Wagonmaker - MPS
(e) Ralph J. Stephenson
(2) Purpose of Phases 2 and 3 planning meetings
(a) To further define, revise and refine scope of work anticipated to be done in Phases 2 and 3.
(b) To prepare summary plans and schedules for Phases 2 and 3.

G. Future meetings

1. Probably meet week of July 18, 1994 to discuss Phase 2.
2. Those to attend
a) John Weisenberger
b) Hans Kuhlmann
c) Trevor Wagonmaker - MPS
d) Ralph J. Stephenson
3. Agenda
a) Refine scope of work for Phase 2
(1) Recognize that some construction for Phase 2 facilities upgrade must be included in Phase 1 design.
(a) New transfer pump station (to be designed in Phase 1 - picks up water from existing filters and new and transfers it to existing Dort Reservoir.
(b) Phase 2 work
i) New filter room
ii) New high service pump station
iii) New administration office
iv) New maintenance shop
v) New operations center
vi) New heating plant
vii) New emergency generator plant

XIII. **Date of meeting - Thursday, August 4, 1994**
- A. **Date of meeting - Thursday, August 4, 1994**
- B. **Location of meeting - City Hall conference room**
- C. **Those attending**
  1. Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
  2. Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
  3. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
  4. Ralph J. Stephenson - Consultant
- D. **Summary of discussion**
  1. Letter from Kathleen Leavey, Deputy Director, City of Detroit DWSD to Mr. Fred D. Watts, Jr. P. E. - dated July 15, 1994
     a) Comments on MPS raw water report.
     b) Points covered by Ms. Leavey
        (1) Asked what second source would be provided if Flint did follow the plan proposed
        (2) Said the proposed blending of Flint water with DWSD water is not acceptable under the terms of the Water Service Agreement. Blending may be allowed under an emergency situation as described in the agreement.
        (3) Questioned accuracy of the computations in the report.
        (4) Questioned validtity of the estimates contained in the report.
        (5) Questioned estimated costs for right of way
        (6) Said the course of action recommended by MPS would cost twice as much as a second source should cost.
        (7) Didn't review the cost estimates for later phases.
        (8) Invited Flint to discuss the second feed to Flint from DWSD in accordance with the DWSD prior proposal. (what proposal was this?).
  2. Reviewed MPS scope of work
     a) Current work under contract
     b) Work to be placed under contract
        (1) Final contract documents for update work
        (2) Construction engineering
     c) Discussed advantages of having remainder of MPS contract executed now.
  3. Next design meeting with MPS is to be on Friday August 12, 1994
     a) jwe will not be there.
     b) Will be at city hall conference room.
     c) Will be detailed discussion of how to get the work done.

XIV. **Date of discussion - August 5, 1994 phone conversation with Mr. Kuhlmann**
- A. **Requested list of all miscellaneous water items that would be of interest and importance.**

XV. **Date of meeting - Friday, August 12, 1994 - 8:43:55 AM**
- A. **Location of meeting - City Hall DPW conference room**
- B. **Those attending**
  1. Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
  2. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
  3. Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
  4. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.

5. Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants
6. Jeff Reynhout, P. E - Project Manager, McNamee, Porter & Seeley - consultants
7. Ralph J. Stephenson, P. E. - Consultant

C. Agenda

1. See MPS agenda for meeting.

D. Activities of previous month

E. Activities through August, 1994

F. Flint River quality results

1. gbu
   a) Untreated Flint River water can be treated to be a potable water according to standards of Health Department.
   b) Flint watershed is so large that it is difficult to accurately sample and predict.
   c) Are three pesticides to watch carefully - data below to be checked carefully - used standard accepted values for this preliminary analysis. Date of collection July 7, 1994
      (1) Alachlor
         (a) Method detection level - .005 ppb
         (b) Measured - 0.9 ppb
         (c) Maximum contaminant level - 2.0 ppb
      (2) Metolachlor
         (a) Method detection level - .05 ppb
         (b) Measured - .07 ppb
         (c) No maximum contaminant level established by EPA.
      (3) Simazine - herbicide
         (a) Method detection level - .04 ppb
         (b) Measured - .4 ppb
         (c) Max contaminant level - 4 ppb
   d) Above does not appear to overly alarming according to MPS
   e) Discussed powdered activated carbon.

G. Solids handling alternatives

1. gbu discussing
   a) Need to soften - as compared to turbidity removal.
   b) Do not yet have information on solids removal.
   c) Educational briefing by gbu
      (1) Disposal options
         (a) Land apply.
         (b) Land fill.
         (c) Combine product with some other product to produce usable material.
            i) Waste water sludge
            ii) Clippings
            iii) Other composting materials
            iv) Horse manure with sawdust
         (d) How to generate a market and to produce the product?
         (e) Must have the solids handling capabilities.
         (f) Water plant lime sludge as conditioner on land.
         (g) Try to find a reuse option.

(h) Lime sludge currently in greatest use for land fill.
(i) Must get support for the concept of solids disposal system.
(j) One of the secondary or last options to be considered is land fill - hku
(k) Storage of solids may be a problem.
i) If left set in vessel will be hard to remove.
(l) Keep options open.

d) Timing of when Lake Huron facility will be available, influences design and selection of a solids removal option.
e) Solids handling is a throw away cost.
f) Single belt filter press and some drying facilities may be recommended - will be in report.

H. Schedule review

1. gbu mentioned the simple bar chart and the detailed lists of activities
2. Lake Huron plant planned to be on line before expiration of current water contract with DWSD - ± December 21, 2000
3. Planning process for plant needs to start in early 1995 to meet expiration of water contract with DWSD.
4. Estimated time of construction is determined by length of time needed to install transmission line.
   a) 4 construction contract being carried out simultaneously.
   b) Assume prefer to have Michigan based contractors.
   c) Bonding capacity should available - may determine availability.
5. hku wants to show earlier dates than contract expiration for completion of phase 3.
6. Need to build float time into schedule
7. Points to consider
   a) Political ramifications of the published schedule of work .
   b) Need for adequate design time to meet the construction needs.
8. rjs suggests we may need to meet a date ahead of contract expiration to be acceptable.

I. Near term planning needs

1. Right of way acquisition
2. Etc.

J. Performance feedback

K. General notes

1. Jeff reporting on conceptual design efforts from 07/28/94 through 08/12/94 - status report #2
   a) Established treated water quality requirements
      (1) See Status Report #2
      (2) Settling on lime or soda ash for treatment chemicals?
      (3) Operating in blending mode
         (a) Number of different operating modes for coagulation.
         (b) For entire Flint River supply single stage processing may be best.
      (4) Trying to get best performance from the existing plant possible.
      (5) Working on conceptual design based on minimal changes to existing plant.
      (6) Filter media being inspected - seem to be usable with some upgrade work - filter bottom?

(7) Will complete review of plant and operations in August, 1994 and prepare report on MPS work.
(8) May want to contact suppliers to inspect plant and make recommendations.
(a) On replace or rehab situations might be good to consider supplier recommendations.

b) Service Agreement Negotiations
c) Treatment Facility Sanitary Survey
d) Raw Water Quality Survey
e) Bench Scale Testing
f) Conceptual Improvement Plan

2. gbu discussing
   a) Trying to get draft docments on concept design by early September, 1994
   b) Conceptual plan preparation is on planned schedule as established by MPS.
   c) Want to discuss several items with COF.
3. hku discussing
   a) Spell out meaning of phrases instead of using abbreviations.
   b) Need hard copies of statistical reports to help follow along with the oral presentation.
4. jwe discussing
   a) May need to move the design to an earlier date.
5. Summary
   a) Do we need some public relations efforts?
   b) gbu feels it is essential to the success of the project.
   c) Need names of possible public relation consultants to help sell the project.
   d) Need to plan a public relations program.
6. gbu wants to know when they should present their proposal for consideration of timing.
   a) jwe suggested we have a draft of a proposal letter for the remaining work to be done by our next planning meeting.
      (1) Will try to have this draft in mail by August 26, 1994 pm
      (2) Will discuss the draft proposal in meeting on 09/09/94.
7. MPS will be making some use of local talent in the design of the facility.
   a) May need input for best utilization of local firms.
8. What related organizations may be involved in the project.
   a) County road commissions
   b) Genesee County Drain Commission
   c) Genesee County
   d) etc.
9. Must determine conditions of easement from county line to the plant.
10. The project planning team should be considering how to maintain a good, fair, accurate public relations program for the Lake Huron supply in relation to City Council.
    a) hku would like a simple, one page update prepared on the Lake Huron Water Supply for the council each month.

XVI. Date of meeting - Friday, August 12, 1994 - 11:26:46 AM

A. Location of meeting - Water Plant conference room

B. Those attending

1. John Weisenberger - Supervisor, Water Treatment Plant & Facilities. - in meeting part time
2. Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
3. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.
4. Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants
5. Jeff Reynhout, P. E - Project Manager, McNamee, Porter & Seeley - consultants
6. Ralph J. Stephenson, P. E. - Consultant

C. Agenda

D. General notes

1. Comments from project team re project planning and scheduling.
   a) Phase 1 - treatment facility upgrade
      (1) Proposal preparation and advertising - 4 to 5 weeks from issue of construction documents package.
      (2) Bid evaluation, recommendation to council, approval of council, and issue notice to proceed - 12 weeks from receipt of proposals
      (3) Bond sale - 12 weeks from receipt of construction proposals.
         (a) Types of bonding to consider.
            i) General obligation
            ii) Revenue
            iii) Other
      (4) Construction of phase 1 facilities
         (a) Total construction period - 2 construction seasons
   b) Phase 2 - expansion of treatment facilities
      (1) Design period including city of Flint reviews - 24 weeks from date of authorization to issue to city of Flint for bidding.
      (2) Proposal preparation and advertising - 4 to 5 weeks from issue of construction documents package.
      (3) Bid evaluation, recommendation to council, approval of council, and issue notice to proceed - 12 weeks from receipt of proposals
      (4) Bond sale - 12 weeks from receipt of construction proposals.
         (a) Types of bonding to consider.
            i) General obligation
            ii) Revenue
            iii) Other
      (5) Construction of phase 2 facilities
         (a) Total construction period - 2 construction seasons
   c) Phase 3 - transmission and Lake Huron end work
      (1) Initial planning efforts - will take from 9 to 12 months from notice to proceed.
         (a) MPS work - design items
            i) Right of way acquisition
            ii) Soils investigations
            iii) Intake water quality survey
            iv) Easement needs and analysis
               (1) New
               (2) Existing

(b) Recommendations from MPS to COF on
  i) Property purchases
  ii) Easement acquisition

(2) Design stages
  (a) Preliminary design - 20 to 24 weeks from right of way control be acquired adequate to assure construction feasibility.
  (b) City review - 8 to 12 weeks from submission of preliminary design.
  (c) Final design - 20 to 24 weeks from city approval of preliminary design

(3) Regulatory reviews - 8 weeks from any submittal
  (a) Act 399 - construction permit - health department
  (b) Act 346 or 347 - inland lakes and streams - DNR
  (c) Rail crossing permits
  (d) Section 404 - Corps of Engineers
  (e) Real estate permits - DNR
  (f) Erosion control permits - DNR
  (g) Local building permits.
    i) County
    ii) Township
    iii) City
    iv) Village
    v) Crossing
  (h) Federal and state funding agencies.
  (i) others?

(4) Proposal preparation and advertising - 6 to 7 weeks from issue of construction documents package.

(5) Bid evaluation, recommendation to council, approval of council, and issue notice to proceed - 12 weeks from receipt of proposals

(6) Bond sale - 12 weeks from receipt of construction proposals.
  (a) Types of bonding to consider.
    i) General obligation
    ii) Revenue
    iii) Other

(7) Construction of phase 3 facilities
  (a) Intake construction - 2 summer seasons
    i) Cannot begin construction in spring before May 1 because of spawning season.
    ii) Must complete construction activity by October 15 because of spawning season.
  (b) Pump station construction - 2 calendar years
  (c) Transmission main construction - 462 working days - probably 3 construction seasons.
    i) Roughly 70 miles of pipeline
    ii) Assume production rate of 100 feet per day per crew - must verify production rates.
      (1) Consider river crossings, rail crossing, pipeline interferences, etc.

iii) Assume construction from May through December.
iv) Assume 4 construction contracts in work simultaneously. Each contractor has 2 pipeline crews working simultaneously.

2. gbu and jeff would like copies of network models for use.

XVII. Date of meeting - Friday, September 9, 1994 - 8:39:33 AM

A. Location - DPW conference room

B. Those attending

1. Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
2. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
3. Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
4. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.
5. Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants
6. Jeff Reynhout, P. E - Project Manager, McNamee, Porter & Seeley - consultants
7. Ralph J. Stephenson, P. E. - Consultant

C. Agenda

1. √Review current status of work.
2. Discuss site acquisition considerations.
3. Discuss agency and regulatory front end requirements.
   a) By the existing statutes any public easement must be approved by the political area through which it passes.
   b) In St. Clair county if the improvement benefits the township residents, approval not needed.
4. Review 2nd pipeline data files with Mr. Seaman - to be done Friday, September 19, 1994 - time to be set.
5. Review bond issue procedures.
6. Review financing procedures.
7. Complete draft network model for remainder of all work through phase 3.
8. Review and update the financial analysis of the cost savings in summary form. Do with MPS and COF staff. See notes below.
9. From mps.
   a) Report on conceptual design progress.
   b) Discuss draft proposal.
   c) Make dry run, presentation to finance committee on September 27, 1994,

D. General notes

1. Copy master index of 2nd pipeline material
2. Conceptual design process
3. Draft proposal - draft outline for phase
   a) Need the plan of work.
   b) Must convey material to director to motivate him to move ahead.
   c) John recommends the following:
      (1) Have the director request approval for the remainder of phase 1 work. MPS will be the engineer of record for this work.
      (2) Name MPS the recommended engineer of record for the entire project.

d) How can we get the project support needed to put the remainder of Phase 1 into MPS
e) How can we get the project support needed to begin active work on Phases 2 and 3.

4. Presentation to finance committee - Wednesday, 09/21/94 - media will be there
   a) Details
      (1) Time 1:00 pm
      (2) Location - ne corner of council chamber.
      (3) Tentative date for dry run on presentation
         (a) Friday, September 16, 1994
         (b) Time to be set
         (c) Those to attend
            i) Mayor Woodrow Stanley
            ii) David Redy - City Administrator
            iii) James Mahoka - Director of Intergovernmental affairs
            iv) Matt Grady - Budget Director
            v) Fred Watts - if available
            vi) Hans Kuhlmann
            vii) Richard Seaman
            viii) John Weisenberger
            ix) Glenn Burkhardt
            x) Jeff Reynhout
            xi) Bob Carlyon
            xii) Ralph J. Stephenson ?
      (4) Purpose of presentation to the finance committee. Must start something in near future if we are going ahead.
      (5) Make dry run to the Director if he is available. If not make dry run to hku, mayor. Must check with the Director.
      (6) Length of presentation - about 20 minutes
      (7) Have an attractive and easily read handout outline
   b) Stress cost benefits of the 2nd pipeline
      (1) Recoup within 25 years
      (2) Your water bill will not increase by virtue of this improvements. Note: the increase might be due to other reasons.
      (3) Give summary of the cost analysis
      (4) The cost is circular, tracking the cost and how it is paid off.
   c) Questions
      (1) How do we convince the entire group of the validity of the project.
      (2) Do we need financing information for the presentation.
         (a) State there is a critical area of bond and finance work - need to start this by early 1995. Lay groundwork for this work now.
   d) Stress
      (1) Cost savings in alternative.
         (a) List current costs
         (b) Other
      (2) Customer satisfaction
      (3) Local control
      (4) Enhanced reliability

(5) Regulatory pressures
(6) Weakened negotiating position for second source caused by delays.
(7) Vulnerability of the city to technical failure of the system.
(a) What happened in Oakland County in June, 1994
(b) What happened in break east of Imlay City y in 198?

e) What has to be done now, soon, in the near and distant future.
f) Show the consequences if we do not improve the water system.
(1) Lowered water quality
(2) Restricted water supply
(3) Increased costs for the water.
(4) Higher community vulnerability to water outages.
(5) The probability of imminent legal action by the Michigan Department of Public Health.
(6) Extremely poor negotiating position with the current supplier of water.
g) Show the benefits if we do improve the water system.
(1) Improved water quality
(2) Relatively unlimited water supply
(3) No cost increases due to the water improvements
(4) Available of a backup water system for emergency use.
(5) Display of good faith and avoidance of legal action from the Michigan Department of Health
(6) Vastly improved negotiating position with current supplier.
h) Prepare, blow up, and mount network model.

5. What do we give to the Director to help resolve the problems and get approvals.
6. Meeting notes
a) John W. reviewed the numbers prepared by him of March 30, 1994
(1) Is for phase 2 only.
(2) Savings is the interim savings
(3) When complete the savings per day jump nearly 3 times.
(4) Must rework the figures to include the entire project.
(5) Hans recommended using the annual figures.
7. John comments on cost analysis
a) Show current costs
b) Show costs under the alternatives.
c) Show long range cost structure
d) Show interim cost structure
8. Presentation rehearsal by Glenn B
a) Figure 7.1 - Cost trends for DWSD second supply compared to Lake Huron Supply.
(1) What are we comparing?
(2) What is the present system?
(3) What is the proposed system?
b) Project overview
(1) Phase 1 - Water Treatment Facility Upgrade
(2) Phase 2 - Water Treatment Facility Expansion
(3) Phase 3 - Lake Huron related facilities
(a) Lake Huron water supply

(b) Lake Huron pumping station
(c) ?

c) Project schedule
(1) Phases 1, 2 and 3 for planning, design, and construction.
(2) Considerations
(a) Acquisition of right of way
(b) Soil investigations
(c) Financing the project
(d) Regulatory considerations
(e) Community considerations.

d) Critical Path (take out this word) Efforts - Fiscal year 1994 - 1995
Need to explain what the phases encompass. Where is phase 2.
(1) Phase 1 - Design - from October, 1994 through March, 1995
(2) Phase 1 - Bid and award- March 1995 through May, 1995
(3) Phase 3 - Planning - January, 1995 through December, 1995
(4) Phase 1 - Construction - June, 1995 through April, 1997

XVIII. Date of meeting - Friday, September 9, 1994 - 1:51:02 PM

A. Location - Water plant conference room

B. Those attending

1. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
2. Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
3. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.
4. Ralph J. Stephenson, P. E. - Consultant

C. Agenda

1. Complete draft network model for remainder of all work through phase 3.
2. Discuss pipeline and other site acquisitions.
3. Discuss agency and regulatory front end requirements.
   a) By the existing statutes any public easement must be approved by the political area through which it passes.
   b) In St. Clair county if the improvement benefits the township residents, approval not needed.
4. Review financing procedures.
5. Review bond issue procedures.
6. Review and update the financial analysis of the cost savings in summary form. Do with MPS and COF staff. See notes below. (MPS will do)

XIX. Date of meeting - Friday, October 14, 1994 - 08:35 AM

A. Location - DPW office conference room

B. Those attending

1. Fred Watts, P. E. - Director Department of Utilities and Public Works
2. Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
3. Ralph J. Stephenson, P. E. - Project Consultant

C. General notes

1. A blue ribbon committee has been appointed by the Mayor to study the planning and implementation of the water program.
2. Their work is to be completed in 60 calendar days.

3. My work should be suspended until they have completed their 60 day study.
4. I am to:
   a) Prepare a summary report for Mr. Watts.
   b) Copy the material in my files to Mr. Carlyon.
   c) Provide the department copies of the data file and planning disks.
   d) Add the hold of 60 calendar days into the current network model and reissue the plan of work.

XX. Date of meeting - Friday, October 14, 1994 - 10:00 AM

A. Location - Water plant conference room

B. Those attending

1. John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
2. Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.
3. Ralph J. Stephenson, P. E. - Consultant

C. Agenda

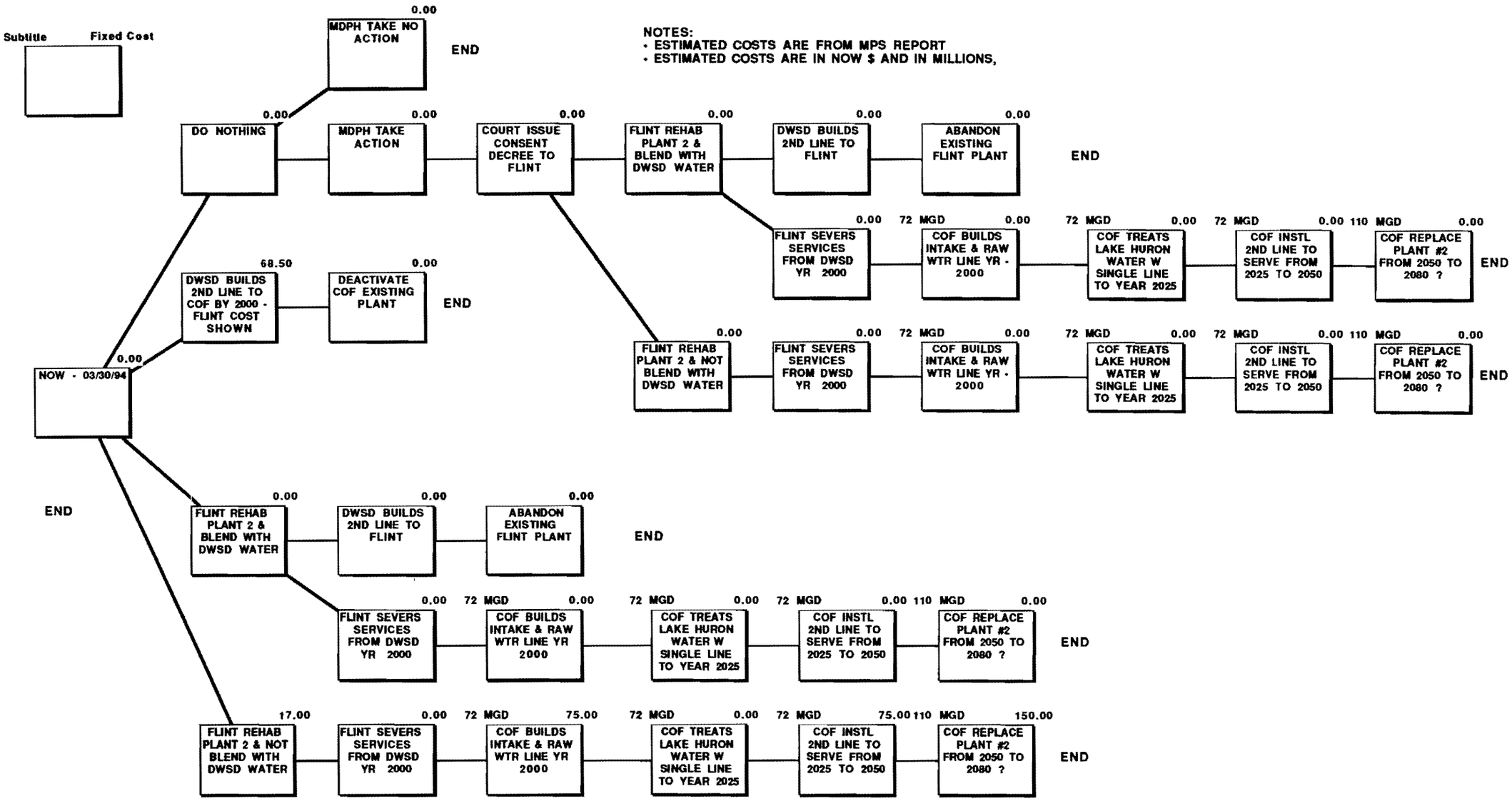
1. √ Add hold on current network.
2. √ Get water material file ready for copying by Sue.
3. √ Copy data disk 194.
4. √ Brief Bob Carlyon on data file and and retrieval system.
5. √ Discuss how to transfer document file to City of Flint.
6. Discuss copying of all COF disks for City of Flint.
7. Discuss format of summary report to Mr. Watts, Hans Kuhlmann, and others.

D. COF data file information transfer

1. It is the desire of Mr. Watts and Mr. Kuhlmann to save the existing data material from the earlier water studies dating back to the early work done in 1984.
2. Sue is copying all documents in the master document file.
3. I will give Bob Carlyon disk copies of the water files pertinent to the document files.

E. Update network model to reflect the hold on the project

1. Hold is to extend to completion of blue ribbon committee work from the am of October 14, 1994 to the AM of December 14, 1994.
2. According to Mr. Weisenberger the conditions imposed on the current network model to produce sht #1, issue #4, dated October 14, 1994 will impact as follows:
   a) MPS is delayed for 42 working days in starting their final design for upgrade & required work.
   b) MPS will require 5 working days to prepare and submit their preliminary draft report for phase 2 and 3 design work from the release of the hold on their work.
   c) Council approval of upgrade design work engineering will be delayed 42 working days
   d) Phase 1 completion is extended resulting in a loss of revenue for the extended period of time.
   e) Phases 2 and 3 completion may be extended from the expected spring 2001 completion to a fall 2001 completion. The reason for this is that to complete the piping connections, to complete the influent chamber, and to start up the plant in phases 2 and 3 will require minimal system load and no summer algae conditions in the river. In summary if we cannot complete the piping modifications in the spring of 2001 we may have to complete them in the fall of 2001


Subtitle
Fixed Cost
NOTES:
• ESTIMATED COSTS ARE FROM MPS REPORT
• ESTIMATED COSTS ARE IN NOW $ AND IN MILLIONS,
NOW - 03/30/94
0.00
DO NOTHING
0.00
MDPH TAKE NO ACTION
0.00
END
MDPH TAKE ACTION
0.00
COURT ISSUE CONSENT DECREE TO FLINT
0.00
FLINT REHAB PLANT 2 & BLEND WITH DWSD WATER
0.00
DWSD BUILDS 2ND LINE TO FLINT
0.00
ABANDON EXISTING FLINT PLANT
END
FLINT SEVERS SERVICES FROM DWSD YR 2000
0.00
72 MGD
COF BUILDS INTAKE & RAW WTR LINE YR - 2000
0.00
72 MGD
COF TREATS LAKE HURON WATER W SINGLE LINE TO YEAR 2025
0.00
72 MGD
COF INSTL 2ND LINE TO SERVE FROM 2025 TO 2050
0.00
110 MGD
COF REPLACE PLANT #2 FROM 2050 TO 2080 ?
0.00
END
FLINT REHAB PLANT 2 & NOT BLEND WITH DWSD WATER
0.00
FLINT SEVERS SERVICES FROM DWSD YR 2000
0.00
72 MGD
COF BUILDS INTAKE & RAW WTR LINE YR - 2000
0.00
72 MGD
COF TREATS LAKE HURON WATER W SINGLE LINE TO YEAR 2025
0.00
72 MGD
COF INSTL 2ND LINE TO SERVE FROM 2025 TO 2050
0.00
110 MGD
COF REPLACE PLANT #2 FROM 2050 TO 2080 ?
0.00
END
DWSD BUILDS 2ND LINE TO COF BY 2000 - FLINT COST SHOWN
68.50
DEACTIVATE COF EXISTING PLANT
0.00
END
END
FLINT REHAB PLANT 2 & BLEND WITH DWSD WATER
0.00
DWSD BUILDS 2ND LINE TO FLINT
0.00
ABANDON EXISTING FLINT PLANT
0.00
END
FLINT SEVERS SERVICES FROM DWSD YR 2000
0.00
72 MGD
COF BUILDS INTAKE & RAW WTR LINE YR 2000
0.00
72 MGD
COF TREATS LAKE HURON WATER W SINGLE LINE TO YEAR 2025
0.00
72 MGD
COF INSTL 2ND LINE TO SERVE FROM 2025 TO 2050
0.00
110 MGD
COF REPLACE PLANT #2 FROM 2050 TO 2080 ?
0.00
END
FLINT REHAB PLANT 2 & NOT BLEND WITH DWSD WATER
17.00
FLINT SEVERS SERVICES FROM DWSD YR 2000
0.00
72 MGD
COF BUILDS INTAKE & RAW WTR LINE YR 2000
75.00
72 MGD
COF TREATS LAKE HURON WATER W SINGLE LINE TO YEAR 2025
0.00
72 MGD
COF INSTL 2ND LINE TO SERVE FROM 2025 TO 2050
75.00
110 MGD
COF REPLACE PLANT #2 FROM 2050 TO 2080 ?
150.00
END

doc #	fldr #	document description	date of document	fr	to	type	date of mtg	foot note #
1	1	Report on Alternate Water Supply Study for Flint, Michigan	5/11/83	bva	cof	rep		
2	1	Projected Water Use for Genesee County, including City of Flint - 1990 thru 2025	8/14/86	gco	spl	dat		
3	1	Report on Emergency Water Supply Options fo Division of Water & Waste Services	1/26/87	bve	gco	rep		
4	1	Information on service area, demand, routes, route rankings, route recommendations & criteria for route evaluation	9/3/87	jck	wew	inf		
5	1	Draft Study Report - second Flint pipeline	10/15/87	jck	wew	rep		
6	1	Draft Executive Summary - Study Report - Second Flint Water Supply Line	12/2/87	jck	wew	rep		
7	1	Study Report - Second Flint Water Supply Line	1/7/88	dws	spl	rep		**07**
7	1	Study Report - Second Flint Water Supply Line - page #1	1/7/88	dws	spl	rep		**09**
8	1	Executive Summary Study Report - Second Flint Water Supply Line	1/20/88	dws	spl	rep		**08**
8	1	Executive Summary Study Report - Second Flint Water Supply Line - page #8	1/20/88	dws	spl	rep		**10**
9	1	Water Quality Investigation Engineering Survey and Evaluation - to be returned to John Weisenberger - returned 11/1/89	11/9/88	pne/ rra/a si/	cof	rep		
10	2	Letter re designation of wca and jck to meet with cof staff to work on finance & engineering for second pipe line to Flint	3/21/86	cod/c wi	wew	ltr		
11	2	Proposal to cof re professional consulting services in water system evaluation - City of Flint	3/29/86	rjs	wew	ltr		
12	2	Genesee County population projections through 2010	4/2/86	dws?	spl	dat		
13	2	Contract 70000011 - rjs with cof for project planning work on water system	6/4/86	cof	rjs	ctr		

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
14	2	Report #1 - Flint/Detroit Water Report	6/7/86	rjs	spl	pre		
15	2	Handwritten rjs notes re miscellaneous items	7/8/86	rjs	rjs	hwn		
16	2	Letter re average day design values and population projections	7/17/86	gco/v be	spl	ltr/da t		
17	2	Letter re projected water use for Genesee County including City of Flint - 1990 to 2025	8/21/86	gco/v be	spl	ltr		
18	2	dws property and row acquisition process flow chart	8/27/86	dws	gen	fch		
19	2	Map of proposed second pipline to Flint from Detroit	10/28/86	dws?		map		
20	2	Letter stating that the cwi has been directed to proceed on studies of a 2nd pipeline	12/8/86	cod/d yo	jsh	ltr		
21	2	Letter re water plant improvements	1/5/87	mps	wew	ltr		
22	2	Letter re csx right of way occupancy	2/5/87	csx	kco	ltr		
23	2	Route selection criteria (brainstorm stage) - Detroit/Flint loop	4/6/87	dsw	spl	inf		
24	2	Handwritten preliminary construction cost estimates of 7 alternatives	6/9/87	dws?		dat		
25	2	Letter re revised estimated project costs and sketches for 7 alternatives for Detroit/Flint Loop - Second Flint Supply Line	6/25/87	dws/ jck	wew	dat		
26	2	Letter re analysis and data of alternative #9 for Detroit/Flint Loop - Second Flint Supply Line	7/30/87	dws/ jck	wew	dat		
27	2	Transmittal re draft study report for 2nd water supply line	10/15/87	dws	wew	ltr		
28	2	Transmittal re study report for 2nd Flint water supply line	2/10/88	dws	wew	rep		

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
29	2	Copy of amended City of Flint/Genesee County Water Agreement as of March 31, 1988	4/15/88	cof/w ew	dws/ jck	ltr		
30	2	Rough reference notes re City of Flint water supply system	8/2/89	rjs	rjs	gnt		
31	3	spl mtg nts 7/6/86 - general info and planning laundry lists for networks	7/8/86	rjs	spl	mnt		
32	3	spl mtg nts 8/12/86 - general info and route discussions	8/12/86	rjs	spl	mnt		
33	3	spl mtg nts 8/27/86 - general discussions - earlier meeting notes attached	8/27/86	rjs	spl	mnt		
34	3	spl mtg nts 9/9/86 - general discussions and diagramming	9/9/86	rjs	spl	mnt		
35	3	spl mtg nts 9/23/86 - monitoring of prelim engineering, discussion of property acquisition & review of joint progress report	9/23/86	rjs	spl	mnt		
36	3	spl mtg nts10/14/86 - monitor prelim engrg, discussn of emergency demand, proprty acquisition & 2nd source configuration	10/14/86	rjs	spl	mnt		
37	3	spl mtg nts 10/28/86 - presented and discussed bve study gco routes, reviewed progress report #1 & general discussion	10/28/86	rjs	spl	mnt		
38	3	spl mtg nts 10/28/86 - abstract from mtg notes of 10/28/86 on bve gco routes	10/28/86	rjs	spl	mnt		
39	3	cof mtg nts 12/2/86 - reviewed mission of spl, need for second supply, bacteria in cof water, course of current action (cof stff only)	12/2/86	rjs	spl	mnt		
40	3	cof mtg nts 1/13/87 - discussed cof chlorination and dechlorination & 3 installation cases (cof stff only)	1/13/87	rjs	spl	mnt		
41	3	spl mtg nts 1/13/87 - reviewed current status of project, route selection & take off points at Flint	1/13/87	rjs	spl	mnt		
42	3	spl mtg nts 2/10/87 - discussed rr row use, bve emergency options report, water service to areas south of cof, & route selection	2/10/87	rjs	spl	mnt		
43	3	spl mtg nts 2/10/87 - duplicate of oen 42 with corrections noted	2/10/87	rjs	spl	mnt		

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
44	3	spl mtg nts 3/10/87 - discussed route selection criteria, weighting & gco/cof requirements	3/10/87	rjs	spl	mnt		
45	3	spl mtg nts 4/14/87 - major discussion of route selection criteria, weights to be assigned & use of other than engrg criteria	4/14/87	rjs	spl	mnt		
46	3	spl mtg nts 5/12/87 - pre mtg nts & continuing discussion of factors to be used for route selection & definition of criteria	5/12/87	rjs	spl	mnt		
47	3	spl mtg nts 5/12/87 - similar to oen 46 but with pre meeting note and abbreviation list consolidation added	5/12/87	rjs	spl	mnt		
48	3	spl mtg nts 6/9/87 - wca attended. Discussed involvement of rates & arrangements task force, purpose of loop and route observations	6/9/87	rjs	spl	mnt		
49	3	spl mtg nts 7/14/87 - discussed route ratings, ranked routes, & evaluated rankings	7/14/87	rjs	spl	mnt		
50	3	spl mtg nts 9/8/87 - Discussed information letter to wew from jck dated 9/3/87	9/8/87	rjs	spl	mnt		
51	3	spl mtg nts 10/14/87 - monitored current project status, began planning for design & construction activities	10/14/87	rjs	spl	mnt		
52	3	spl mtg nts 11/10/87 - discussed study report dated 10/14/87 - to be no more routine meetings of engineering task force	11/10/87	rjs	spl	mnt		
53	4	Random notes re cof water treatment plant disposition - early considerations re alternative sources of water for Flint	6/6/84	rjs	rjs	nts		
54	4	Report #1 - discussed second water supply problems, alternatives, time spans, decision trees	6/4/84	rjs	wew	mtr		
55	4	Report #2 - planned for cof water test run, prepared prelim decision tree analysis for alternative sources of water	7/18/84	rjs	wew	mtr		
56	4	Rough draft of letter to Mayor Coleman Young from Mayor James Sharp re Mayor Young's thoughts on a second pipeline	8/1/84	jsh	cyo	ltr		
57	4	Report #3 - monitored progress of test run prep, identified factors affecting selection of a course of action, discussed procedures	9/19/84	rjs	wew	mtr		
58	4	Report #4 - reviewed test run, rated various courses of action possible	10/25/84	rjs	wew	mtr		

doc #	fldr #	document description	date of document	fr	to	type	date of mtg	foot note #
59	4	Report #5 - continued discussion of alternatives adding costs to the analysis. Made prelim decsions on course of action	4/2/85	rjs	wew	mtr		01
60	4	Letter to jwe re summary of decision tree branches discussed earlier - copy of limited decision tree attached	4/15/85	rjs	jwe	ltr		
61	4	Letter to kco giving recommended course of action to follow (suggested action B as described on page 3 of report #5)	4/23/85	rjs	kco	ltr		
62	4	Letter to Mayor Young from Mayor Sharp re Flint need for a second source of water.	3/1/85	jsh	cyo	ltr		02
63	4	Report #6 - reviewed decision tree analyses and diagrammed most desirable alternative, action B	6/17/85	rjs	wew	mtr		
64	4	Photo file index for plant photos	6/4/85	rjs	rjs	dat		
65	4	Computer analysis of courses of various courses of action	4/11/85	rjs	rjs	dat		
66	4	Organization chart for water plant personnel	6/4/84	jwe	rjs	inf		
67	4	Sample weight value run	4/11/85	rjs	rjs	dat		
68	4	Letter to kco - copy of oen 61	4/23/85	rjs	kco	ltr		
69	4	Letter re application for reissuance of NPDES permit #MI0043613. Administratively complete	5/7/85	dnr/ wmc	wew	ltr		
70	4	Major activity outline for improvements to Flint water plant	7/29/85	rjs	wew	nte		
71	4	Ltr from Mayor Coleman Young to Mayor James Sharp appointing cwi to represent cod in exploratory mtgs & requesting response	8/14/85	cyo	jsh	ltr		03
72	4	Memo re 1st meeting with Flint and Detroit water dept staff to discuss approach to second water supply pipeline planning	12/6/85	wew	kco	mem		04
73	4	Letter re dph concern over need for second pipeline. Want to be informed of progress.	1/16/86	wke	jsh	ltr		

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
74	4	Mtg report re check list for April, 86 run, monitor of action B, monitor of chem disposal & discussion of 2nd pipe line actions	1/22/86	rjs	wew	mnt		
75	4	Request for proposal on consulting for second water supply pipeline from Detroit to Flint	3/17/86	wew	rjs	ltr		
76	4	Agenda for second pipeline meeting of Detroit and Flint water department staffs	3/19/86	?	?	nte		
77	4	Memo re 2nd meeting of Detroit & Flint water dept staffs to discuss second water pipeline	3/17/86	wew	kco	mem		04
78	4	General meeting notes for discussion between wew, bda and rjs re approach to second pipeline study. Outlines key issues	3/19/86	rjs	wew, bda	mnt		
79	2	Letter of agreement proposed for continuation of professional consulting services in water system evaluation	9/6/89	rjs	fwa	ltr		
80	4	Rep #1 - spl meeting #3 to plan design and const 2nd pipe line - prepared prelim des ntwk	6/7/86	rjs	spl	rep	5/27/86	05
81	4	Rep #2 - spl meeting #4 - made gen review of progress, monitored prelim engrg, cont netwk modeling,	7/24/86	rjs	spl	rep	7/8/86	05
82	4	Rep #3 - cont gen discussn of plnng approach, began identifying routes, monitored prelim engrg, prepared ntwk model for prop acquistn	9/4/86	rjs	spl	rep	8/12/87	05
83	4	Rep #4 - monitored prelim engrg, discussed overall progress, prepared draft progress report	10/7/86	rjs	spl	rep	9/3/86	05
84	4	Rep #5 - monitored prelim engrg progress, edited progress report #1, prepared laundry list of route study network	10/21/86	rjs	spl	rep	10/14/86	05
85	4	Rep #6 - reviewed route alternatives, monitored prelim engrg progress, prepd netwk model for prelim design route selection process	11/7/86	rjs	spl	rep	10/28/86	05
86	4	Rep #7 - reviewed loop location alternatives, monitored prelim engrg, reviewed design info available	1/24/87	rjs	spl	rep	1/13/87	05
87	4	Rep #8 - discussed rr row as pipeline route, revwd gco rep on emerg options, discussed route selection criteria & key design tgt dates	2/28/87	rjs	spl	rep	2/10/87	05
88	4	Rep #3 - cont gen discussn of plnng approach, began identifying routes, monitored prelim engrg, prepared ntwk model for prop acquistn	9/4/86	rjs	spl	rep	8/27/86	05

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
89	4	Rep #9 - reviewed route criteria list, weighting methods, and value assignment to provide weighted value of alternatives	3/31/87	rjs	spl	rep	3/10/87	05
90	4	Rep #10 - reviewed criteria to be used in route selection and selected major criteria to be used for final determination	4/27/87	rjs	spl	rep	4/14/87	05
91	4	Rep #11 - revwd route criteria, discussed methods of defining routes, reviewed gco south loop plans & assigned factor weights	5/15/87	rjs	spl	rep	5/12/87	05
92	4	Rep #12 - revwd rates & arrangmts group role, basic purposes of loop, operating implications & made prelim revw of 7 proposed	6/23/87	rjs	spl	rep	6/9/87	05
93	4	Rep #13 - revwd route ratings by dws & cof, discussed route evaluations, made summary evaluation of route ratings	7/18/87	rjs	spl	rep	7/14/87	05
94	4	Rep #14 - revwd draft study rep material, discussed final route selection method & monitored current progress against work plans	9/23/87	rjs	spl	rep	9/8/87	05
95	4	Rep #15 - discussed draft study report dated 10/15/87 & reviewed future actions of engineering task force	11/21/87	rjs	spl	rep	11/10/87	05
96	4	Cover letter to dph from cof transmitting 10/31/86 progress report #1 written by rjs to wew. Progress report attached	11/18/86	wew	wke	ltr		
97	4	Progress report #1 summary of work to date on pipeline loop for 2nd supply to Flint from Detroit	10/31/86	rjs	wew	rep		
98	4	Preliminary study draft of Progress Report #2 on Detroit/Flint pipeline loop for 2nd supply to Flint	11/30/87	rjs	wew	rep		
99	7	Notebook of handwritten notes for cof water study work from 6/4/84 to 1/22/86 & cof/dws work from 5/27/86 to 3/10/87		rjs	rjs	hwn		
100	5	Sheet #PE1 network model, issue #1, dated 5/27 86 - Preliminary Engineering Activities - full size sheet	5/27/86	rjs	spl	ntw		06
101	5	Sheet #PE1 network model, issue #1, dated 5/27 86 - Preliminary Engineering Activities - half size sheet	5/27/86	rjs	spl	ntw		06
102	5	Sheet #PE1 network model, issue #2, dated 7/8/86 - Preliminary Engineering Activities - half size sheet	7/8/86	rjs	spl	ntw		06
103	5	Sheet #PE1 network model, issue #3, dated 8/12/86 - Preliminary Engineering Activities - half size sheet+	8/12/86	rjs	spl	ntw		06

doc #	fldr #	document description	date of document	f r	to	type	date of mtg	foot note #
104	5	Sheet #PE1 network model, issue #3, dated 8/12/86 - Preliminary Engineering Activities - half size sheet+ - monitoring set	8/12/86	rjs	spl	ntw		06
105	5	Sheet #PE1 network model, issue #3, dated 8/12/86 - Preliminary Engineering Activities - half size sheet	8/12/86	rjs	spl	ntw		06
106	5	Sheet #PE1 network model, issue #3, dated 8/12/86 - Preliminary Engineering Activities - full size sheet	8/12/86	rjs	spl	ntw		06
107	5	Sheet #PE2 network model, issue #1, dated 10/28/86 - Preliminary Engineering Activities - half size sheet - not published	10/28/86	rjs	spl	ntw		06
108	5	Sheet #PAQ1 network model, issue #4, dated 8/27/86 - Property Acquisition Activities - full size sheet	8/27/86	rjs	spl	ntw		06
109	5	Sheet #PAQ1 network model, issue #4, dated 8/27/86 - Property Acquisition Activities - half size + sheet - 6 copies	8/27/86	rjs	spl	ntw		06
110	5	Sheet #PE2 network model, issue #2, dated January 13, 1987 - Preliminary Engineering Activities - half size sheet	1/13/87	rjs	spl	ntw		06
111	5	Unumbered, undated network model showing activity numbers only - prepared by dws staff		dws	spl	ntw		06
112	5	Network dated 7/8/86 showing cof and gco activities in respect to route selection and cost estimate work	7/8/86	rjs	spl	ntw		06
113	5	Sheet #PE1 network model, issue #3, dated August 12, 1986 - Preliminary Engineering Activities - half size sheet+	8/12/86	rjs	spl	ntw		06
114	6	Sht #BS1 & #BS2 netwk, iss #1, dtd 6/17/85 - Summary for cof Demo & Rehab - Course of Action B - full size sheets - hand drawn ruff	6/15/85	rjs	cof	ntw		06
115	6	Network dated 5/27/86, showing steps up to issuing final basic requirements report - full size sheet	5/27/86	rjs	spl	ntw	5/27/86	06
116	6	Network dated 1/13/87, marked superseded. Shows process of preparing final route study report	1/13/87	rjs	spl	ntw		
117	6	Shts #1 & 2, netwk model, iss #1, dated 7/18/84. Test run preparation plan for cof water treatment plant - hand drawn model	7/18/84	rjs	cof	ntw		
118	6	Sheet #1, rough draft of decision tree analysis, iss #2, dated 1/25/84 updated by hand from iss #1, dated 8/7/84 - annotated	10/25/84	rjs	cof	det		

doc #	fldr #	document description	date of document	fr	to	type	date of mtg	foot note #
119	6	Sheet #1, drafted copy of decision tree analysis, iss #2, dated 1/25/84 - annotated	10/25/84	rjs	cof	det		
120	7	mps flow plans & schematics of cof water plant - 2 sheets dated 1/7/87 (not fully legible)	1/7/87	mps	cof	dwg		
121	7	mps partial site plan and details of valves and piping for cof water system - sheets dated 1/8/87	1/8/87	mps	cof	dwg		
122	7	Decision analysis format for assigning wts, values & future influences to cof decision analysis for cof water plant - several copies	10/25/84	rjs	cof	frm		
123	7	Free Press newspaper clipping re Detroit water system backup - dated 1/10/88	1/10/88			nws		
124	7	List of networks prepared, abbreviations used & responsibility codes as of 11/18/87	11/18/87	rjs	spl	dat		
125	7	Attendance sheets for spl meetings		spl	spl	dat		
126	7	Network planning laundry lists of activities		rjs	spl	dat		
127	7	dwsd/cof route evaluation weight selection	5/12/87	rjs	spl	dat		
128	7	dwsd/cof route evaluation form	6/14/87	rjs	spl	frm		
129	7	Rough handwritten notes re route weighting, valuing and evaluation		rjs	spl	hwn		

Reference Copy

5/16/96

Flint Water System #4 - disk 544

I. **Proposal to Hans Kuhlmann and Bob Carlyon for services in the design and upgrading of the City of Flint water plant and for training and educational services for the Flint Department of Public Works.**

II. **Addresses**

A. **Hans Kuhlmann, P.E., Director**

1. Department of Public Works
2. City of Flint, Michigan
3. 1101 South Saginaw
4. Flint, Michigan 48502

B. **Robert Carlyon, Water Plant Supervisor**

1. Water Treatment Facilities
2. Flint Department of Public Works
3. 4500 N. Dort Highway
4. Flint, Michigan 48505

III. **Water treatment plant upgrading - strategic planning for design and construction of Plant #2 improvements.**

A. **Scope of services**

1. Provide planning and scheduling overview of project
   a) Prepare summary network model of full scope of work through early 2000's.
   b) Prepare overview plans and schedules for use by various tiers of internal management
   c) Prepare overview plans and schedules for use by various tiers of extenal organizational management
2. Do detailed consulting, planning, modeling, and scheduling for
   a) Front end validation work
   b) Design work by MPS and others
   c) Integration of work being done by involved exterior agencies and organizations with work being done by the Water Department of the Department of Public Works.
   d) Integration of work being done by other internal Flint City agencies and organizations with work being done by the Water Department of the Department of Public Works.
   e) Preliminary planning of the procurement and construction activies needed to upgrade plant #2 and bring it on line.

B. **Courses of action possible - see page 13 and on in notes for definition of scope of work for various phases of the work.**

1. Rehab plant 2 and continue buying water from COD - 15 mill
2. Rehab plant #2 and sever ties with COD - 25 mill
   a) Use Flint river water
   b) Go to Lake Huron - 125 mill
3. Rehab plant #2, join forces with County - 35 mill
   a) Jointly go to Lake Huron for raw water supply - 125 mill

C. **Suggested scope of work, hours estimated to be spent, and approximate fees.**

1. Water treatment plant upgrading

ii) Network and report preparation = 32 hours
iii) Total estimated time - 112 hours

(3) Phase C - Meet one full day each four weeks to monitor project progress and continue detailed planning on an ongoing basis

(a) Those involved
i) Hans Kuhlmann - part time and as needed
ii) Bob Carlyon - full time
iii) McNamee, Porter, and Seeley project staff - if under contract - part time as needed
iv) Other agencies as are available and involved - as needed

(b) Actions to be taken
i) Update summary network plans and schedules as required
ii) Fully integrate long lead item selection, fabrication, and delivery into the summary and the detailed network models.
iii) Monitor project status against the network plans and schedules.

(c) Estimated time of involvement - 6 to 8 months and 100 hours
i) Meetings - 1 working day per month for 6 months = 6 working days = 72 hours (assume some overlapping with other projects in area)
ii) Network and report preparation = 30 hours
iii) Total estimated time = 102 hours

b) Summary of time on project for one year period

(1) Phase A - Meet for two - two-day meetings in Flint to outline course of action, identify influencing project factors, and initiate planning work.
(a) Estimated time of involvement - 1 to 2 months
(b) Estimated time expended and fee = 60 hours at $95 per hour = $5,700
(c) Estimated expenses - $200 for reproduction costs

(2) Phase B - Meet one full day each two weeks to prepare summary networks and begin detailed networks.
(a) Estimated time of involvement - 3 to 4 months
(b) Estimated time expended and fee = 120 hours at $95 per hour = $11,400
(c) Estimated expenses - $500 for reproduction costs

(3) Phase C - Meet one full day each four weeks to monitor project progress and continue detailed planning on an ongoing basis
(a) Estimated time of involvement - 6 to 8 months
(b) Estimated time expended and fee = 100 hours at $95 per hour = $9,500
(c) Estimated expenses - $300 for reproduction costs

c) Totals for approximate one year period
(1) Estimated time = approximately 280 hours

(2) Fee at $95 per hour = approximately $26,600
(3) Expenses = approximately $1,000

IV. **Training and education program - tools and techniques for the technical management staff - some of the subjects listed below are stand-alone subjects, others must be presented in conjunction with other related subjects.**

A. **Possible subjects**

Hans Kuhlmann and his staff should rate the following subjects for interest and suitability.

1. Agency organization
2. Alternative dispute resolution
3. Benchmarking
4. Business and organizational planning for the future
5. Claim avoidance
6. Closing out the project
7. Conducting effective meetings
8. Conflict and its management
9. Construction service contracts
10. Correcting project deficiencies
11. Creativity and it application in management and engineering
12. Data storage and retrieval
13. Decision making and analysis
14. Documentation and records
15. Effective field administration
16. Effective procurement and expediting
17. Employing the power of training
18. Form content and design
19. Identifying job problems, their causes, and their correction
20. Improving telephone skills
21. Improving writing skills
22. Keys to good management practices
23. Legal aspects of design and construction - an overview
24. Management use of plans and schedules
25. Monitoring the project
26. New and coming management trends in technical organizations
27. Organizing the project
28. Partnering and related subjects
29. Planning and scheduling
30. Preparing project programs
31. Professional service contracts
32. Project cash flow
33. Project delivery systems
34. Project management
35. Resource allocation
36. Risk assignment and management
37. Setting project goals and objectives
38. Time management
39. Translating the plan of work

40. Use of computers as a tool for the manager, the engineer, and the technican
41. Working well with people

B. **Rating system - each subject should be rated according to the following scale.**
   1. 5 - Subject is of extremely high interest to all concerned, and acquiring skills in the subject material that is likely contained would be of great value to the DPW and the participant.
   2. 4 - Subject is of high or above-average interest to all concerned, and acquiring skills in the subject material that is likely contained would be of high or above-average value to the DPW and the participant.
   3. 3 - Subject is of average interest to all concerned, and that acquiring skills in the subject material that is likely contained would be of moderate value to the DPW and the participant.
   4. 2 - Subject is of moderately low interest to those concerned and that acquiring skills in the subject material that is likely contained would be of low value to the DPW and the participant.
   5. 1 - Subject is of very low interest to those concerned, and that acquiring skills in the subject material that is likely contained would be of minimal value to the DPW and the participant.

C. **Possible format of classes**
   1. Initial selection of subjects
      a) To be done by the DPW management and staff with input by RJS as needed.
      b) Time required = 4 hours miscellaneous
   2. Assembling subjects into teaching modules and preparing handout books.
      a) Assemble and outline 3 to 5 selected subject groupings = 6 hours
      b) Prepare handout notebooks for duplication and binding by City of Flint = 10 hours
   3. Teaching classes
      a) Assume 3 to 5 classes, workshops, or seminars totaling
         (1) One at 5 days = 50 hours
         (2) Two at 2 days = 40 hours
         (3) Two at 1 day = 20 hours
         (4) Total hours = about 110 hours.
      b) Duplication of original handout book - by City of Flint DPW

a) Initial work on project - first two months

(1) Phase A - Meet for two - two-day meetings in Flint to outline course of action, identify influencing project factors, and initiate planning work

4 days @ 12hrs = 48
4 days @ 4 = 16
64
64 x 95 = 6080

(a) Those involved

i) Hans Kuhlmann - part time and as needed
ii) Bob Carlyon - full time
iii) McNamee, Porter, and Seeley project staff - if under contract - part time as needed
iv) Other agencies as are available and involved - as needed

(b) Actions to be taken

i) Identify all involved parties, organizations, agencies and others that might impact on the work
ii) Prepare definition of scope of design and construction workfor each of the major phases of the program.
iii) Prepare initial laundry list of actions to be included in each phase of the work.
iv) Begin preparation of summary network models and schedules

(c) Estimated time of involvement - 1 to 2 months and 60 hours

i) Meetings - 4 working days = 48 hours including travel time
ii) Network and report preparation = 10 hours
iii) Total estimated time = 58 hours

(2) Phase B - Meet one full day each two weeks to prepare summary networks and begin detailed networks.

9 days @ 12 = 108
9 days @ 4 = 36
144
144 x 95 = 13,680

(a) Those involved

i) Hans Kuhlmann - part time and as needed
ii) Bob Carlyon - full time
iii) McNamee, Porter, and Seeley project staff - if under contract - part time as needed
iv) Other agencies as are available and involved - as needed

(b) Actions to be taken

i) Complete preparing early summary network models and schedules.
ii) Identify critical long lead time items and obtain as much data as possible regarding their availability and characteristics.
iii) Prepare detailed network models for each of the major phases of work up to start of construction.
iv) Prepare summary network models for procurement, constuction, turnover and activation of upgraded Plant #2.

(c) Estimated time of involvement - 3 to 4 months and 120 hours

i) Meetings - 2 working days per month for 4 months = 8 working days = 80 hours (assume some overlapping with other projects in area)

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

Hans Kuhlmann, P.E.. Director
Department of Public Works
City of Flint, Michigan
1101 South Saginaw Street
Flint, Michigan 48505

Dear Mr. Kuhlmann:

Re: Training and education program for the City of Flint Department of Public Works

In our recent meeting at the water plant you requested that I set down some thoughts and suggestions on how to best plan and implement a training and education program for the Department of Public Works staff. Like many organizations the Flint DPW is faced with having to bring its employees up to higher skill levels quickly and effectively. This is in part due to loss of experienced employees, coupled with overhead reduction programs that tend to reduce in-house staff levels. Both of these management actions intensify the need to better equip the remaining staff to do their work in a highly effective manner.

A good share of my work over the past thirty years has been to train and educate those in planning, design, construction, and maintenance operations about how to improve their skills. I have found that sincere management efforts to improve how employees do their jobs is almost universally appreciated among true professionals. The subjects I have concentrated upon are centered around a central theme of the engineering related staff and how they can best utilize good management techniques to improve utilization of their talents and abilities.

A good improvement program must start from a base of first identifying the subjects of most value to the organization and to the staff members to be taught, coached, or mentored. The second step is to identify and plan the most effective method of conveying the information to the staff members. The third step is to plan and implement methods by which the staff members can best use the information conveyed to improve organizational effectiveness.

In respect to the first point above, I have listed below a starter list of possible topics that you might consider as potential subjects to be used to convey the tools and

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

techniques needed for your technical and management staff. Some are stand-alone subject, others must be presented in conjunction with other related subjects.

I suggest you review this list and rate the topics by the degree of value and interest they might have for you and the DPW staff. To help rate each topic I have found the a rating system of from 1 to 5 of great help in determining what subjects are of value to management, are of value to the staff members being trained, and are of value to the organization of which he or she is a part. The rating system is relatively simple to use and quickly provides an insight into the true needs of any training and education system being considered.

SUGGESTED RATING SYSTEM FOR EDUCATION AND TRAINING TOPICS

5 - Subject is of extremely high interest to all concerned, and acquiring skills in the subject material that is likely contained would be of great value to the DPW and the participant.

4 - Subject is of high or above-average interest to all concerned, and acquiring skills in the subject material that is likely contained would be of high or above-average value to the DPW and the participant.

3 - Subject is of average interest to all concerned, and that acquiring skills in the subject material that is likely contained would be of useful value to the DPW and the participant.

2 - Subject is of moderately low interest to those concerned and that acquiring skills in the subject material that is likely contained would be of low value to the DPW and the participant.

1 - Subject is of very low interest to those concerned, and that acquiring skills in the subject material that is likely contained would be of minimal or no value to the DPW and the participant.

These ratings should be applied to a selected list of subjects that provide a starting point for planning the class and course materials. A starter list of subjects is given below.

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

STARTER LIST OF SUBJECTS TO BE RATED

01. Agency organization
02. Alternative dispute resolution
03. Benchmarking
04. Business and organizational planning for the future
05. Claim avoidance
06. Closing out the project
07. Conducting effective meetings
08. Conflict and its management
09. Construction service contracts
10. Correcting project deficiencies
11. Creativity and it application in management and engineering
12. Date storage and retrieval
13. Decision making and analysis
14. Documentation and records
15. Effective field administration
16. Effective procurement and expediting
17. Employing the power of training
18. Form content and design
19. Identifying job problems, their causes, and their correction
20. Improving telephone skills
21. Improving writing skills
22. Keys to good management practices
23. Legal aspects of design and construction - an overview
24. Management use of plans and schedules
25. Monitoring the project
26. New and coming management trends in technical organizations
27. Organizing the project
28. Partnering and related subjects
29. Planning and scheduling
30. Preparing project programs
31. Professional service contracts
32. Project cash flow
33. Project delivery systems
34. Project management

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

35. Resource allocation
36. Risk assignment and management
37. Setting project goals and objectives
38. Time management
39. Translating the plan of work
40. Use of computers as a tool for the technical manager
41. Working well with people

I recommend your apply the rating system to each of the above topics making a judgment on its value to management, its value to the individual, and to its value to the organization. Each rating should be done separately. From this set of ratings we can then begin to narrow down the choices and select those topics which will be part of the curriculum for the education and training program.

With the first step taken - to select the subjects of most value - the second step can be implemented - how to convey the subjects to your staff. In this letter I can only provide a rough outline since we have still have some analysis work on the subjects to do. However the following guidelines might be of assistance to you in planning for the program. The hours indicated are approximations of what it would take me to plan and teach the classes. For other instructors, these time frames might be different.

Selection of subjects to be presented

To be done by the DPW management and staff with help from me - 6 hours

Assembling subjects into teaching units and preparing class notebooks

Outline three to five selected outline groupings - 6 to 12 hours
Prepare handout notebooks for duplication and binding - 12 to 15 hours
(note: assume duplication and binding to be done by the City of Flint)

Teaching classes - assume five classes or workshops

One at 5 days	total of 50 hours
Two at 2 days	total of 40 hours
Two at 1 day	total of 20 hours

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

Total = 110 class hours of teaching time

The above are merely approximations of the time and scope of a possible course of action. When you decide more specifically on your desired course of action, I would be pleased to assist you with the detailed planning for your training and education program. My fees are $95.00 per hour with reimbursement at cost for out of pocket expenses in the interest of the project.

Enclosed for your information are three brochures from the University of Wisconsin outlining the three courses I teach each year. The course name is circled in orange on the cover of each. You might also find the other seminar material described in the brochures of help in your planning of the training curriculum.

Would you please share these brochures with Mr. Carlyon since he had asked to see some of the educational offerings of the University.

Also enclosed for your information and files is my personal and professional resume. I appreciate your interest in ongoing training and education and shall look forward to helping in your improvement efforts in Flint.

Sincerely yours,

Ralph J. Stephenson, P.E.

cc: Mr. Robert Carlyon
enclosure: resume
U of W flyers

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

Mr. Robert Carlyon, Water Plant Supervisor
Water Treatment Facilities
Flint Department of Public Works
4500 Dort Highway
Flint, Michigan 48505

Dear Mr. Carlyon:

Re: Strategic planning services in the planning, design, and construction of Plant #2 upgrading

It was a pleasure meeting with you and Mr. Kuhlmann at the Flint Water plant recently to discuss Flint's plans for its future water supply. In accordance with your request I have outlined below a suggested method by which I might provide my professional services to the City to assist in the strategic planning effort for this complex upgrading. The period covered by this proposal is approximately one year.

The proposal takes into account that the scope of work as outlined could be revised, expanded or reduced depending on a multitude of financial, political, economic, and technical factors. In the proposal I have estimated the cost of the work I feel might be of most benefit to the City. However only work actually done on the project will be charged. This allows considerable flexibility in assignment, content, and time allocation to the various phases of my work for you.

In the broadest view I suggest my professional services over the one year period encompass the following:

A. Prepare a planning and scheduling overview of project including

1. Summary network models of the full scope of work through the early 2000's.
2. Overview plans and schedules for use by various tiers of internal management
3. Overview plans and schedules for use by various tiers of external organizational management

B. Prepare detailed planning, modeling, and scheduling for the project showing:

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

1. Front end validation work.
2. Program preparation and approval.
2. Design work.
3. Integration of work being done by involved exterior agencies and organizations, with the work being done by the Flint Water Department.
4. Integration of work being done by other internal Flint City agencies and organizations, with the work being done by the Flint Water Department.
5. Preliminary planning of procurement and construction activities needed to upgrade Plant #2 and bring it on line.

To complete the work listed above I suggest we break our activities into three phases:

Phase A - Meet for two - two-day working sessions in Flint to outline courses of action, identify influencing project factors, and initiate summary planning work.

1. Approximate time period of my work - months 1 and 2.

2. Those involved
   - Mr. Hans Kuhlmann - part time and as needed
   - Mr. Robert Carlyon - full time
   - Design team - part time as needed
   - Other organizations and agencies related to the project - as needed

3. Actions to be taken
   - Identify all involved parties, organizations, agencies and others that might impact on the work
   - Prepare definition of scope of design and construction work for each major phase of the program.
   - Prepare initial laundry list of actions to be included in each phase of the project work.
   - Begin preparation of summary network models and schedules

Phase B - Meet one full day each two weeks to prepare summary networks and begin preparing detailed networks.

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

1. Approximate time period of my work - months 3 and 4.

2. Those involved
   - Mr. Hans Kuhlmann - part time and as needed
   - Mr. Robert Carlyon - full time
   - Design team - part time as needed
   - Other organizations and agencies related to the project - as needed

3. Actions to be taken
   - Complete preparing early summary network models and schedules.
   - Identify critical long lead time items and obtain as much data as possible regarding their availability and characteristics.
   - Prepare detailed network models for each of the major phases of work up to start of construction.
   - Prepare summary network models for procurement, construction, turnover and activation of upgraded Plant #2.

Phase C - Meet one full day each four weeks to monitor project progress and continue detailed planning on an ongoing basis

1. Approximate time period of my work - months 5 through 12.

2. Those involved
   - Mr. Hans Kuhlmann - part time and as needed
   - Mr. Robert Carlyon - full time
   - Design team - part time as needed
   - Other organizations and agencies related to the project - as needed

3. Actions to be taken
   - Update summary network plans and schedules as required
   - Fully integrate long lead item selection, fabrication, and delivery into the summary and the detailed network models.
   - Monitor project status against the network plans and schedules.

The product of the work outlined above will be a set of project planning and scheduling documents showing the upgrading work in detail through to its completion. Work on the water facility following activation of the upgraded facility

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

will be shown in summary planning and scheduling documents through to completion of the end of the entire foreseeable water improvement program.

My professional fee is $95 per hour and I anticipate that I will do the majority of the technical work involved in the strategic planning effort. A summary estimate of the time and cost of the work is outlined below. The estimated times include both the meeting time and the follow up office work needed to accomplish the assignment. Expenses are mainly for reproduction of documents produced from our conference and planning work.

Phase A - Meet for two - two-day meetings in Flint to outline course of action, identify influencing project factors, and initiate planning work.

- Estimated time of involvement - 1 to 2 months
- Estimated time expended and fee = 64 hours at $95 per hour = $6,080
- Estimated expenses - $300 for reproduction costs

Phase B - Meet one full day each two weeks to prepare summary networks and begin detailed networks.

- Estimated time of involvement - 3 to 4 months
- Estimated time expended and fee = 130 hours at $95 per hour = $12,350
- Estimated expenses - $600 for reproduction costs

Phase C - Meet one full day each four weeks to monitor project progress and continue detailed planning on an ongoing basis

- Estimated time of involvement - 6 to 8 months
- Estimated time expended and fee = 100 hours at $95 per hour = $9,500
- Estimated expenses - $400 for reproduction costs

Totals - for approximate one year period

- Estimated time = approximately 294 hours
- Fee at $95 per hour = approximately $27,930
- Expenses = approximately $1,300

date printed:5/16/96

Ralph J. Stephenson, P.E., P.C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537
May 16, 1996

Billings for the work will include charges only for time and expenses actually incurred in the interest of the work. Invoices will be submitted monthly.

I am looking forward to working with you and the entire project team in this very exciting program over the next several months. I recommend we initiate our work as quickly as possible since the Plant #2 upgrading program time frame is a relatively short period considering the sizable amount of work that must be done to produce a quality facility that will properly serve the needs of the City of Flint.

Thank you for your confidence in my abilities to assist in this very important and significant project.

Sincerely yours,

Ralph J. Stephenson, P.E.

cc: Mr. Hans Kuhlmann
enclosure: resume

date printed:5/16/96

City of Flint, Michigan
Capital & OM program

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer

October 18, 1993

Report #01: City of Flint Department of Public Works - Capital and O & M projects program planning - Flint, Michigan

Date of meeting: Monday, October 11, 1993 (wd 711)

Location of meeting: Flint Water Plant conference room

Those attending:

- Fred Watts, Jr., P. E. - Director Department of Public Works - in meeting part time
- Mike Mansfield, P. E. - DPW Project Engineer
- Mike Lunn - WPC Operations Supervisor
- Bob Carlyon - Assistant Supervisor FWP&F - substituting for John Weisenberger
- Ralph J. Stephenson, P. E.

Actions taken:

- Discussed general approach to planning and scheduling Capital and O & M program.
- Defined preliminary mission, goals and objectives of Overview Committee.
- Reviewed five year capital improvement program.
- Identified information needed for planning work, and resources needed for the work.
- Set data field types for tabulating capital and O & M information.
- Selected 12 projects on which to test planning format.
- Formulated and tested preliminary data display format.
- Prepared and tested bar chart format for displaying project data.
- Began preparing glossary of terms to be defined for planning work.

General:

This was the first meeting of the Scheduling Overview Committee and was attended by those listed above. Mr. John Weisenberger, the Water Plant Supervisor is Chairman of the Overview Committee, and the project manager for my services in this work. The committee was established by Mr. Watts to plan, schedule and monitor the Capital, and Operations and Maintenance projects anticipated in the five year budget of the DPW.

Mr. Watts attended the initial part of the meeting and briefly described what he expected from the committee. The Committee's assignment is to insure that the projects are planned and scheduled accurately. As individual projects move from budgeting, to granting of funds, and into implementation, the Committee is to keep them on schedule and within budget.

My responsibility is to assist the Committee and its members to effectively accomplish this entire budgeting, planning, scheduling, and implementing process.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer

October 18, 1993

Currently, Mr. Lunn has assembled and tabulated all capital improvement projects projected to be addressed over the next five fiscal years. This tabulation, dated September 1, 1993 (wd 682) shows 119 projects, and was used as a basic resource in our discussions. During the meeting I prepared ongoing notes about the Committee's work and the various matters discussed. These notes were issued to Committee members at the close of the meeting. They have been slightly edited for readability and are enclosed with this report.

The mission of the Committee at this meeting was to develop an achievable plan of work by which the assigned work of the Committee could be done. This involved defining and accomplishing several items including:

01.) Determine the information needed to reliably plan and schedule each project, and to show their interrelations with other projects in work and to be done.

02.) Set a format to display individual project information that would allow proper planning and scheduling, and permit ease of translation into other forms for higher management review and use.

03.) Set suitable translation methods for concisely presenting usable data about the project for upper and middle management use.

04.) Select sample projects by which the planning, scheduling, and information summary format can be tested and approved prior to full scale use.

05.) Set schedule of immediate future work for the Overview Committee.

06.) Establish series of regular meeting dates for Overview Committee sessions.

A brief review of each item is given below.

01.) Determine the information needed to reliably plan and schedule each project, and to show their interrelations with other projects in work and to be done.

The Committee decided to incorporate the following information fields into the project data file. These are subject to further review by the Committee, and a review and approval by Mr. Watts:

- **Project number** - The first four digits of the project number will be the cost center designation. The last three designations will be the order in which Mr. Lunn has listed the cost center projects in his initial tabulation.
- **Project name**
- **Fund**
- **Cost center**
- **Cost center priority** - ratings, ranking, values, weights
  (1) Current project - continuation funding requirements.
  (2) New prioritized - funding required.

(3) Funding is not a current fiscal year issue.

- **Impetus type**
  (1) I. Regulatory compliance
  (2) II. Economic savings projected
  (3) III. Potential litigation/safety
  (4) IV. Obsolescence
  (5) V. Contract expiration
- **Fiscal year funding requested & amount.**
- **Fiscal year funding to be expended & amount.**
- **Fiscal year funding actually expended & amount.**
- **Impetus narrative** - why are we planning to do this project?
- **Project background** - brief narrative project history and rationale for doing.
- **Benefits of project** - narrative
- **Funding sources** - statistical - (how does this differ from the fund above?)
- **Short and long term consequences** - narrative
- **Citizen comments on project related matters** - narrative
- **Regulatory needs for information** - narrative
- **Political needs for information** - narrative
- **Resources needed**
  (1) Internal staff
  (2) Internal consultants
  (3) External consultants
  (4) Other

r) **Resources available**
(1) Internal staff
(2) Internal consultants
(3) External consultants
(4) Other

02.) Set a format to display individual project information that would allow proper planning and scheduling, and permit ease of translation into other forms for higher management review and use.

One format being considered presently by the Committee is a brief one page summary of project data bound into loose leaf notebooks. This notebook would be provided to the Director and to each of the cost center managers for their reference use. It would be kept current by the addition of new project sheets, or updating of current project sheets as required.

03.) Set suitable translation methods for concisely presenting usable data about the project for upper and middle management use.

The initial format considered for display of the total capital improvements program information is a time scaled bar chart on which the point at which the funding is granted and the planned project implementation period is shown by a time bar. A sample of this bar chart display is attached to this report.

For both summary and detailed project planning the format used would be the network model which

shows individual activities within a project linked together in a logic system to which resources such as time, manpower, equipment, money and other such items are assigned. These networks would be used to track each individual project as it is implemented.

The individual project network models would be further translated into time scaled and narrative displays such as bar charts, and data runs. These are to be used by the persons responsible for project implementation and day to day planning and monitoring.

04.) Select sample projects by which the planning, scheduling, and information summary format can be tested and approved prior to full scale use.

Twelve projects, four each from Mike Mansfield, Mike Lunn, and Bob Carlyon, were selected by them for preparing a sample system model. The data needed to complete the sample data sheets and as defined in point **01.)** above is being tabulated by each of the three managers responsible for the work. They have agreed to have this information to me by Monday, October 25, 1993 (wd 718).

I will then prepare a summary format with the sample material for our next Committee meeting discussions. I will also set a suggested format for displaying the summary material and for the detailed network models for the project.

Sample projects selected were:

0312002 - Grand Traverse - 6th to 9th Ave.
0312003 - Bradley - Court to Sunset - paving
0312004 - Chevrolet - DuPont to Flushing - paving
0312006 - Kearsley Bridge Rehabilitation
0394001 - Dechlorination System
0394003 - Filter and Floc Rehab
0394004 - Rehab Torrey Road Booster Station
0394006 - PS#4 New Pump Installation
0395001 - NPDES compliance project
0395002 - Stormwater Management Plan
0395003 - Treatment Area Discharge Modification
0395004 - Blower Monitoring - Modification

05.) Set schedule of immediate future work for the Overview Committee.

Once the sample set of projects has been put into the summary format and the graphics for the system are prepared, we shall reconvene the Committee to review the work and obtain their approval for submitting and recommending a course of action to Mr. Watts.

06.) Establish series of regular meeting dates for Overview Committee sessions.

When final format approval on the sample projects is obtained from the Committee and Mr. Watts, we will schedule and hold regular meetings of the Overview Committee to input all current projects into the system selected.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer

October 18, 1993

Concurrently I will develop methods with the committee by which each project can be planned in detail and monitored regularly.

As part of our work in this initial meeting we began to develop a project glossary of terms, and a list of abbreviations to be used in our planning work. The glossary and abbreviation list will be an ongoing effort during our work to improve communications relative to project planning.

I am pleased at the work of the Committee in this first meeting, and appreciate especially the information they all had available at the meeting to help in our discussions.

I shall be in touch with Mr. Watts soon to set a meeting to review the Committee's initial work and to set future direction. This report and the attachments are being sent to Mr. Watts only for his review. Further distribution will be by him. I recommend that copies of the reports be given to Mr. Weisenberger, Mr. Mansfield, and Mr. Lunn. It would be appropriated to also provide Mr. Carlyon a copy since he attended the meeting as Mr. Weisenberger's representative.

Attachments:
Meeting notes #1
Bar charts of test projects

Ralph J. Stephenson, P. E., P. C.

date printed: May 6, 1996

City of Flint, Michigan
Capital & OM program

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
April 23, 1994

Report #02: City of Flint Department of Public Works - Capital Improvements Overview Committee work - Flint, Michigan

Date of meeting: Wednesday, March 30, 1994 (wd 317)

Location of meeting: Flint Water Plant conference room

Those attending:

- Mike Mansfield, P. E. - DPW Project Engineer - in A. M. meeting
- Mike Lunn - WPC Operations Supervisor - in A. M. meeting
- John Weisenberger - Flint Water Plant & Facilities
- Ralph J. Stephenson, P. E. - Project Management Consultant

Actions taken:

- Discussed purposes and responsibilities of the cip overview committee.
- Made preliminary cip overview committee assignments.
- Reviewed cip work responsibilities of cost center managers.
- Begin reviewing how to best proceed on the water plant & facilities expansion planning.
- Discussed related reference materials available for work of overview committee.

General:

The major responsibility of the Capital Improvements Program (cip) Overview Committee is to assist the project management consultant implement a program of action in conjunction with the cost center managers to accomplish the following:

1. To provide and assign preliminary priorities to cip projects as set by the cost center managers from budgets prepared by cost center managers. This is to be done by the overview committee for the initial list only (dated March 4, 1994). This task is now complete.

2. To collect capital improvement program (cip) file information for each project from each cost center manager. This information is to be entered in the Department of Public Works and Utilities master file by the group recommended by the Director. The format is to be similar to that prepared by Mike Lunn for the five year cip dated March 3, 1994.

3. To collect and review data for inclusion in a master cost center capital improvement project file book for the Director.

4. To assist to prepare a data base summary of the capital improvement project file for use by the cost center managers and the Director.

5. The project management consultant is to outline & conduct orientation briefings (with the assistance of the cip overview committee) for cost center managers and their staff on how to use the cip file for:

(1) Historical reference use.
(2) Planning expenditures
(3) Project record keeping.
(4) Project tracking and monitoring.
(5) Project costs.
(6) Analyzing trends in actual vs. planned costs and time.

6. To provide a resource to assist cost center managers and the project management consultant to keep the DPW cip projects on a monitored, predictable time schedule within budgeted targets, and to identify the interactions between all projects in the cip.

7. To aid the Director to determine, through periodic recommendations to the project management consultant, how the cip project list format and content can be upgraded to help improve DPW cost center effectiveness.

8. To aid the Director to determine demonstrated value added by the efforts of the DPW cost centers to the City of Flint.

9. To develop and implement a procedure with the project management consultant for preparing the annual cip project file by cost center, during the budget preparation period, for the next fiscal year, and for the succeeding five years, all within budget constraints.

Mike Lunn has done much of the work on the cip master project file to date and will provide the Overview Committee with adequate cip data and the format so as to properly fulfill their duties as outlined above. He will also work closely with John Weisenberger to insure timely transmission of cip project file information to the Director, Mr. Watts.

The cip master file should be in an easily updated format so cost center managers can input and revise project impetus as justified by current conditions and impacts on the capital program. The format should also allow cost center managers to revise project funding in accordance with revised impetus types as required.

Impetus types currently being used include:

I. Regulatory compliance
II. Economic savings projected
III. Potential litigation/safety
IV. Obsolescence
V. Other (this list is to be continually reviewed for appropriate additions)

In this Overview Committee meeting we also discussed the cip related work responsibilities of cost center managers. These are delineated in the attached meeting minutes from our session of Wednesday, March 30, 1994. For ease of reference however, they have been edited in accordance with Mr. Watts suggestions, and shown below.

<u>CIP work related responsibilities of cost center managers</u>

1. 0310 - Administration - Fred Watts (fdw)

2. 0311 - City Engineer - vacant
   a) cip project management.

3. 0312 - Engineering division - Mike Mansfield (mgm)
   a) ROW projects in City of Flint.
      (1) Street repair.
      (2) Bridge maintenance and repair.
   b) Sidewalk replacement program.
   c) Flood control project with Corps of Engineers.
   d) Geographic Information System implementation and maintenance.

4. 0314 - Accounting - Mattie Jones (mjo)
   a) Tracking fixed assets.
   b) DPW cip contract administration

5. 0321, 0322, 0323, 0324 - Building and safety inspection - Jim Brady (jbr)

6. 0340 - Building maintenance - Kevin Mackey (kma)
   a) Maintenance of city hall properties.
   b) List to be expanded.

7. 0361 - Street maintenance - Jeff Bye (jby)
   a) Maintaining and repairing streets and sidewalks.
   b) Sweeping streets.
   c) Removing snow & ice.
   d) Patching potholes .

8. 0372 - Traffic engineering - Don Berry (deb)
   a) Signal maintenance.
   b) Street signing
   c) Traffic control.
   d) Street light maintenance.

9. 0381 - Waste collection - Dennis Owens (dow)
   a) Scheduled pick up.
   b) Bulk pick up.

10. 0391 - Water administration - vacant (all items below questioned by Mr. Watts)
    a) Replace billing system (cis - customer information system).
    b) Negotiating contracts for water and sewer systems for the city.
    c) Storm water management
    d) Utilities division automation (mjl project manager for this project).
    e) cip project management.

11. 0392 - Water office - Booker Houston (bho)

a) Not defined at this meeting.

12. 0393 - Water service center - Randy McConnell (rmc)
    a) Distribution improvements.
    b) Sewer maintenance.
        (1) Root control.
        (2) Grease and oil.
        (3) Spill response.
    c) Water distribution and collection system model. (gis and Hardy Cross).

13. 0394 - Water plant and facilities - John Weisenberger (jww)
    a) High priority projects are
        (1) Plant rehabilitation.
        (2) COD DWSD negotiations.
        (3) Lake Huron pipeline.
        (4) Dam rehabilitation.
        (5) Safety compliance.
    b) See cip list for other projects

14. 0395 - Water pollution control facility - Roy Zietz (raz)
    a) See cip list for other project.
    b) High priority projects are
        (1) NPDES (National Pollution Discharge Elimination System) permit updates
            (a) 503 regulations (USEPA).
            (b) Surface water quality (MDNR).
            (c) Storm water management.
        (2) Automation of
            (a) Wet side.
            (b) Third Avenue pumping station.
        (3) Safety compliance.

In the afternoon Mr. Weisenberger and I met to prepare an outline of the various alternative courses of action available to follow in relation to the expansion of the water plan to accommodate the possible needs of four basic actions. They are:

1.) Do nothing.
2.) Detroit builds 2nd line to City of Flint by year 2000.
3.) Flint rehabilitate plant 2 and bend with Detroit water.
4.) Flint rehabilitate plant 2 and not blend with Detroit water.

From these four basic actions we further branched the decision tree into eight major courses of action to consider. This decision tree will form the basis of the various planning actions to be considered over the next few months. A copy of the decision tree is attached to this report and entitled Attachment A.

Please note that Mr. Watts has asked that we consider attaching the records of previous water plant expansion efforts to this report. There are many records of previous work and attaching them to this report would be very expensive, time consuming, and make the report extremely large. The records in my

files are available as required.

This report is being sent to Mr. Watts only per his request. He will review and annotate the report as he desires and forward to others on the Overview Committee.

Attachments: Meeting notes from March 30, 1994
Decision tree - Attachment A

Ralph J. Stephenson, P. E., P. C.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
April 25, 1994

Report #03: City of Flint Department of Public Works
Capital Improvements Overview Committee work
Flint, Michigan

Dates of meetings: Tuesday, April 12, 1994 (wd 326)
Wednesday, April 20, 1994 (wd 332)
Thursday, April 21, 1994 (wd 333)

Locations of meeting: DPW conference rooms at City Hall and at Flint Water Plant conference room

Those attending:

Tuesday, April 12, 1994

- Fred D Watts, Jr., P. E. - Director Department of Public Works - early A. M. only
- John Weisenberger - Flint Water Plant & Facilities Plant Supervisor
- Mike Mansfield, P. E. - DPW Project Engineer - in A. M. only
- Randy McConnell - Water Service Center - in A. M. only (name added later)
- Bob Carlyon - Assistant Supervisor - FWP&F - in A. M. only
- Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - in A. M. only
- Ralph J. Stephenson, P. E. - Project Management Consultant

Wednesday, April 20, 1994 (wd 332)

Early A. M.

- Fred D Watts, Jr., P. E. - Director Department of Public Works
- Ralph J. Stephenson, P. E. - Project Management Consultant

Late A. M. and P. M.

- John Weisenberger - Flint Water Plant & Facilities Plant Supervisor
- Ralph J. Stephenson, P. E. - Project Management Consultant

Thursday, April 21, 1994 (wd 333)

- Fred Watts - Director
- Mattie Jones - Accounting
- John Weisenberger - Water plant and facilities
- Don Berry - Traffic engineering
- Roy Zietz - Water pollution control facility
- Mike Mansfield - Engineering division
- Jim Brady - Building and safety inspection
- Dennis Owens - Waste collection

- Booker Houston - Water office
- Jeff Bye - Street maintenance
- Kevin Mackey - Building maintenance
- Ralph J. Stephenson - Project management consultant

Actions taken:

Tuesday, April 12, 1994 (wd 326)

- Discussed content of MPS proposal for concept package and construction document preparation for new Lake Huron water supply system.
- Reviewed implications of proceeding under various options outlined in MPS design proposal.
- Defined options to be modeled and tested for new Lake Huron water supply system design
- Prepared preliminary network models for option A and option C work under MPS proposal for concept and construction document preparation.

Wednesday, April 20, 1994 (wd 332)

A. M.

- Reviewed and defined cip overview committee responsibilities.
- Discussed work assignments of project management consultant.
- Discussed operating methods for cip overview committee.

Late A. M. and P. M.

- Discussed and formulated preliminary content for use of cip master project data file.
- Began defining format of cip summary project data file and cip book file.

Thursday, April 21, 1994 (wd 333)

- Met with Director and cost center managers, and briefly discussed cip information program.

Summary:

Tuesday, April 12, 1994 (wd 326)

In the early morning meeting we discussed the scope of work proposed by McNamee, Porter, and Seeley for design of the proposed Lake Huron supply system.The total proposal for current planning of the Lake Huron supply system includes a concept design for plant 2 and a new Lake Huron supply system, and the design for a progressive rehabilitation and upgrading of plant 2.

The initial work package of MPS, entitled Phase 1, and being considered now, is required to be done within a design fee cap of $500,000. A concept design is included in Phase 1 that will provide the Flint DPW Director and his staff a technical standard of performance to be used as a guide to action from now through the year 2001, the approximate expiration date of the current DWSD water supply contract.

The remainder of the Phase 1 design fee of $500,000 is to be allocated to the most effective combination of plant 2 required and upgrade work as determined by MPS, the City of Flint water plant management, the DPW Director. This work is also subject to Michigan Department of Public Health approval. Because of the approvals needed, an early determination of the content of the MPS design included in Phase 1 is critical.

The work scope for this $500,000 cap work is to be submitted to City Council for approval, and must encompass enough work to satisfy Council that the program adds adequate value to COF water services to its customers.

Phased design work must take into full account, potential regulatory change requirements and anticipated technology change influences on the full program of work.

The Phase 1 design fee is to result in three main components as its work product.

1.) A concept design that provides a standard of water improvement action from now through 2001.
2) Required-work design to preliminary approval or to start of construction.
3) Upgrade-work design to preliminary approval or to start of construction.

Definitions currently being used are as follows:

• Concept design - A basis of final design used to set standards for the entire Flint water service area including a Lake Huron inlet through to delivery of potable water to the customer's tap. It encompasses a total design and construction period from April 12, 1994 through the year 2001.

• Required-work - Work that is needed now to prevent the issuance of a boiled water notice (incident).

• Boiled water incident - A point in time where the MDPH requires all water for human consumption be boiled before use.

• Upgrade work - Work beyond required-work, that will further enhance the operation and product of the existing facility as of April 12, 1994.

Mr. Watts stressed that the Flint DPW is to take the lead in planning the work in conjunction with MPS. Further, the City is to maintain a monitoring and planning position that primarily serves the City of Flint and the water plant staff needs. The City of Flint water and engineering staff is to be deeply involved with the design and construction of the new system.

The meeting group next made some preliminary test determinations of possible options within a Phase 1 scope of work. In essence the question to be answered by this discussion was, "What is the City of Flint buying in Phase 1?"

The first scenario considered was Option A. Included in the scope of work under Option A was the following:

• For $500,000 - Option A

(a) Total concept design.
(b) Required-work design to preliminary approval.
(c) Upgrade-work design to preliminary approval.

The second scenario considered was Option B. Included in the scope of work under Option B was the following:

• For $530,000 - Option B

(a) Total concept design.
(b) Required-work design to start of construction.
(c) Upgrade-work design to preliminary approval.

The third scenario considered was Option C. Included in the scope of work under Option C was the following:

• For $600,000 - Option C

(a) Total concept design.
(b) Required-work design to start of construction.
(c) Upgrade-work design to start of construction.

Those attending the meeting made rough estimates of design times and costs to assist to simulate various courses of action. Details of these elements are contained in the April 12, 1994 (wd 324) meeting minutes enclosed with this report. It should be kept in mind that these elements and simulations are only rough determinations to allow early action evaluations.

Estimated allocations of construction costs and times are contained in the MPS proposal dated March 17, 1994.

In the afternoon session Mr. Weisenberger and I prepared preliminary network models for courses of action under Options A and Option C.

The Option A network model is shown on sheet #1, and is labeled Issue #1, dated April 12, 1994 (wd 326). A copy of this model is enclosed as Attachment A with this report. The individual sheets of this model are unassembled to allow ease of copying. If desired the sheets can be trimmed at the match lines and taped together.

The Option C network model is shown on sheet #2, and is also labeled Issue #1, dated April 12, 1994 (wd 326). This model copy is enclosed as Attachment B, and has been left unassembled for ease of copying.

A full evaluation of the two options and their benefits and shortcomings was not made at this meeting due to the press of time. In a later meeting Mr. Watts indicated that he desires us to proceed presently under Option A with the $500,000 design cap. It should be pointed out that the design cost analysis indicates that the full fee cap may not be used in completing Option A work. This matter should be evaluated carefully since subsequent design package release approvals must mesh properly with the

scope of work in prior packages.

Wednesday, April 20, 1994 (wd 332)

Early A. M. meeting

Mr. Watts and I rewrote the responsibility list for the cip overview committee. This edited responsibility list is contained in Report #02, on pages 1 and 2. and was also reproduced in a memo to Mr. Watts from me, dated April 20, 1994 (wd 332). The memo was distributed to the cost center managers at their weekly meeting on April 21, 1994 (wd 333). It is the intent to follow this set of responsibilities as the basis of an action plan for using the cip data as a DPW capital improvement planning tool.

At this meeting Mr. Watts set, and later confirmed, the following meeting dates at which I will brief Mr. Watts on the points as outlined in his memo to me of April 1, 1994 (wd 319). I shall also provide Mr. Watts with an agenda before each briefing meeting, and shall prepare a summary briefing of our discussions.

- May 13, 1994 08:30 to 09:30 am
- June 17, 1994 08:30 to 09:30 am
- July 15, 1994 08:30 to 09:30 am

The afternoon session with John Weisenberger was devoted to initiating a detailed analysis of his ideas, as a cost control manager, regarding the information format and content of the capital improvements program (cip) master data file. The material discussed is recorded in some detail in the April 21, 1994 meeting notes attached.

In summary, Mr. Weisenberger determined that the fields of current importance in a cip master data file include:

(a) Project number
(b) Project name
(c) Fund
(d) Cost center
(e) Cost center priority
(f) Impetus types
(g) Fiscal year funding requested & amount
(h) Fiscal year funding to be expended & amount
(i) Fiscal year funding actually expended & amount
(j) Impetus narrative - why are we planning to do this project?
(k) Project background
(l) Benefits of project

Other data fields to be discussed and added as appropriate.

(1) Funding sources - statistical
(2) Short and long term consequences - narrative
(3) Citizen comments on project related matters - narrative

(4) Regulatory needs for information - narrative
(5) Political needs for information - narrative
(6) Resources needed
(7) Resources available
(8) Pro's of taking project action
(9) Con's of taking project action
(10)Pro's of not taking project action
(11)Con's of not taking project action

I shall continue this discussion with Mr. Weisenberger and the other cost center managers as I meet with each of them to discuss their routine needs and their common and special needs along with the needs of the Director, that must be satisfied by the capital improvement program information system.

Mr. Weisenberger next reviewed how the cip master data file might be used to improve preparation of Action Request Letters (arl). It is his thinking that the arl's should be generated by direct use of the cip book narrative file data.

Action request letter paragraphs are somewhat standard, and currently include the following:

(a) Action requested.
(b) Background.
(c) Budget impact.
(d) Steps following positive action.
(e) Consequences of negative action.

An extended combination of cip master file items might also include the following information fields:

(a) Action requested.
(b) Background.
(c) Budget impact.
(d) Steps following positive action.
(e) Consequences of negative action.
(f) Description (change to action request letter [ARL] & description).
(g Equipment listings (keep as field in data file for other uses than ARL).
(h) Needs addressed by the project (change to action request letter [ARL] history and background).
(i) Benefits or impact (change to ARL budget impact).
(j) Pro's of doing the project action.
(j) Pro's of doing the project action.
(k) Con's of doing the project action.
(l) Pro's of not doing the project action.
(m)Con's of not doing the project action.

Additional ideas concerning the content of the cip master data file were discussed, and are briefly summarized in the April 20, 1994 meeting minutes attached.

Thursday, April 21, 1994 (wd 333)

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
April 25, 1994

At this meeting I met most of the cost center managers and briefly reviewed the work to which I have been assigned as the project management consultant. I also explained the duties and responsibilities of the cip overview committee in relation to the cost center managers.

Mr. Watts said he felt my efforts with the cost center managers would be best implemented if I outlined the work to date with the cip overview committee, and then discussed it with the individual cost center managers.

I shall set meetings with each manager to discuss the cip data files, and gain valid, constructive input from each of them. Individual meetings will start with a series of three. These will be with Don Berry, traffic engineering, Jeff Bye, street maintenance, and Jim Brady, building and safety inspection. I shall call Mr. Berry, Mr. Bye, and Mr. Brady to set mutually satisfactory meeting dates.

General:

We have now laid the groundwork for implementing a Capital Improvement Program data system, and have initiated our DPW project management work on the Water Department Lake Huron supply system. Efforts will continue on each of these as outlined in the responsibilities of the cip overview committee, and in the assignments to the project management consultant from Mr. Watts.

This report is being sent with the attachments to Mr. Watts only. He will route additional copies to the DPW staff as appropriate.

Enclosures:
meeting minutes for April 12, 1994
meeting minutes for April 20, 1994
meeting minutes for April 21, 1994
Attachment A - network model
Attachment B - network model

Ralph J. Stephenson, P. E.

date printed: May 6, 1996

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
June 20, 1994

Report #04: City of Flint Department of Public Works
Capital Improvements Overview Committee work
Flint, Michigan

Dates of meetings: Tuesday, May 10, 1994 (wd 346)
Friday, May 13, 1994 (wd 349)
Thursday, June 16, 1994 (wd 372)
Friday, June 17, 1994 (wd 374)

Locations of meetings: DPW conference rooms at City Hall, Flint Water Plant, and Flint Waste Water Plant.

Those attending:

Tuesday, May 10, 1994 (wd 346)

- Don Berry - Traffic engineering
- Dennis Owens - Waste collection
- Kevin Mackey - Building maintenance
- Ralph J. Stephenson, P. E. - Project management consultant

Friday, May 13, 1994 (wd 349)

- Fred D Watts, Jr., P. E. - Director Department of Public Works
- Ralph J. Stephenson, P. E. - Project management consultant

Thursday, June 16, 1994 (wd 372)

- Mike Mansfield - Engineering division
- Mattie Jones - Accounting
- Booker Houston - Water office
- Roy Zietz - Water pollution control facility
- Ralph J. Stephenson - Project management consultant

Friday, June 17, 1994 (wd 374)

Early A. M.

- Fred D Watts, Jr., P. E. - Director Department of Public Works
- Hans Kuhlmann - Deputy Director of Public Works
- Ralph J. Stephenson, P. E. - Project management consultant

Late A. M.

- John Weisenberger - Water Plant Supervisor

- Ralph J. Stephenson, P. E. - Project management consultant

Actions taken:

Tuesday, May 10, 1994 (wd 346)

- Met individually with Don Berry, Dennis Owens, and Kevin Mackey, interview group A, and discussed capital improvements program format and content.

- Reviewed methods of improving the use of the capital improvement program material with interview group A.

- Discussed planning processes that might be appropriate for each of the individual capital improvement projects with interview group A.

Friday, May 13, 1994 (wd 349)

- Met with Mr. Watts, Director Department of Public Works and discussed current work on the planning and scheduling of the cost center project work.

- Reviewed material with Mr. Watts from current interviews with the cost center managers.

Thursday, June 16, 1994 (wd 372)

- Met individually with Mike Mansfield, Mattie Jones, Booker Houston, and Roy Zietz, interview group B, to review capital improvements program format and content.

- Discussed how to improve the use of the capital improvement program material with interview group B.

- Discussed how to better plan the cost center manager's capital improvement projects within the structure of a capital improvements program with interview group B.

Friday, June 17, 1994 (wd 374)

- Met with Mr. Watts, Director Department of Public Works, and Mr. Hans Kuhlmann, Deputy Director of Public Work. Reviewed current work on the formatting, planning and scheduling of the cost center project work.

- Reviewed current cost center manager interview material with Mr. Watts and Mr. Kuhlmann.

- Reviewed the immediate future course of action for capital improvement planning with Mr. Watts and Mr. Kuhlmann.

- Met with John Weisenberger, Water Plant & Facilities Supervisor to discuss current status of new Port Huron supply project, and how best to plan individual projects within the Water Plant and Facilities cost center 0394.

City of Flint, Michigan
Capital & OM program
Report #04

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
June 20, 1994

Summary:

Tuesday, May 10, 1994 (wd 346)

This group of meetings was for the prime purpose of discussing the capital improvements program format and content individually with the cost center managers. It was felt appropriate to conduct individual sessions with each cost center manager to allow a free interchange of information leading to the planning for each project in their five year plan. Meeting notes taken during the session are enclosed with this report and entitled attachment A.

I have designated this series of meetings as interview group A. Those interviewed generally have a strong interest in the capital programming and budgeting system. They, however, have limited application for the present system of displaying data.

Reviewing the five year program for fy 93 through fy 97, dated March 3, 1994 indicates that for cost centers 0372 (traffic engineer - Don Berry), cost center 0381 - waste collection - Dennis Owens), and cost center 0340 (building maintenance - Kevin Mackey) there are 11 projects, all in cost center 0340.

However it appears that the contribution each cost center manager has the potential to make to the total city engineering effort is considerable. It is possible that the perception of the capital budgeting process and of the five year planning effort by the cost center managers could be altered, particular for those whose capital improvement budgets are low, but who still are responsible for considerable expenditures of city funds.

This matter will be considered as active planning of each capital project proceeds in the near future.

Friday, May 13, 1994 (wd 349)

Mr. Watts and I met for our regular monthly review of planning work. We discussed the results of the initial interviews on Tuesday, May 10, 1994 (wd 346) with selected cost center managers, and Mr. Watts commented on the meeting notes prepared as a result of those interviews.

Mr. Watts desires the cip planning and scheduling material to be for Department of Public Works projects and expenditures only. External interrelations with other departments and agencies are important, but the five year program presently being established should center mainly on activities of the DPW managers and staff. It should particularly focus on planning, scheduling and tracking their department's work effectively.

Mr. Watts requested that the next series of interviews include Mike Mansfield, Mattie Jones, and Booker Houston.

Thursday, June 16, 1994 (wd 372)

At this series of cost center manager interviews I spoke with Mike Mansfield (cost center 0312 - engineering), Mattie Jones (cost center 0314 - accounting), Booker Houston (cost center 0392 - water office), and Roy Zietz (cost center 0395 - water pollution control facility). This is designated below as

interview group B.

I set the objective of the sessions by defining my work as being to to provide a currently accurate and monitorable course of action for each cip project defined in the capital program improvements budget.

In the interviews and meetings we concentrated on several basic questions that are critical to most good planning, scheduling, and tracking systems. These are:

a) How could the cost center managers best set their priorities?

b) How should the information be inputted, translated & used?
   (1) Inputting
   (2) Translating
   (3) Using

c) Who is to input

d) Who is to translate?

e) Who is to monitor and track?

f) How can the coding of the cip program be improved over the present coding?

During my discussions with interview group B several items were mentioned that should be considered in the systems design. Some of these are listed at random below:

a) In many cases a cip need is identified only when a crisis arises. This rushes solutions.

b) Advance information is not always available for accurate input to the cip.

c) Need a good pavement plan of action.

d) Need a good water distribution plan of action.

e) Need a good waste water collection plan of action.

f) Need a good storm water collection plan of action.

g) Need a good rating systems to set infrastructure priorities.

h) Effective project management requires the following to be answered:
   (1) Who's managing?
   (2) Who's responsible?
   (3) Who's in the authority position?
   (4) Who's liable?

i) Classes of project funding influence their management.

(1) All third party funding.
(2) Some third party funding.
(3) No third party funding.

j) Need a good coding system to permit effective data storage, retrieval and use.

k) A new billing system is one of the major accounting cip line items.

l) Should consider how the DPW cis system interfaces with the city cis system. (cis - customer information system.)

m) Need a definition of what a DPW cis system might do.

n) Need a priority assignment system that relates to community needs.

o) Consideration of staff retirements and the management needs of their replacements will affect cip performance and results.

p) Need to capture all data about the projects that are to be included in cip. Of

q) Work in setting a good planning, scheduling, and tracking system should be heavily concentrated on during July, August, and September, 1994.

r) A usable system of planning, scheduling, and tracking must accommodate periodic review and revision as needed.

Friday, June 17, 1994 (wd 374)

Early A. M.

Met with Mr. Fred Watts and Mr. Han Kuhlmann, the new Department of Public Works Deputy Director for our regular review of the capital improvements planning, scheduling, and tracking system, and the Port Huron water supply program.

Mr. Watts first reviewed the work being done by the overview committee with Mr. Kuhlmann,. I then summarized the interviewing done to date and the direction being followed in bringing the cip planning and tracking system on line.

It appears presently that the major components of the basic system are best defined by three major components:

a) The input.
b) The translations and management tools.
c) The output.

Input is the information that is provided by the cost center managers about their separate line item projects to be placed in the five year capital improvement program. This information must be authentic,

complete, and take into full account the needs for the project, and how these needs are to filled by the project execution.

Translations and management tools are the documents that result from the input assembly and analysis. The tools must be usable, and relate specifically to the cip management needs of the director and the cost center managers. Included will be the plans, schedules, tracking documents, and narratives prepared from the cost center manager's input.

Output is basically the five year plan containing the full information about each project as identified by the cost center managers and planned by them in conjunction with the project management consultant.

There will be further derivations and interpretations of the basic three part system outlined above. However these are to evolve out of the basic system as it is brought on line.

Mr. Watts, Mr. Kuhlmann, and I discussed the work to be done in actually planning the projects. They have suggested I begin active planning with Mike Mansfield (cost center 0312), Don Berry (cost center 0372), and Kevin Mackey (cost center 0372) for projects within each of their centers. I shall contact these three managers, and set a planning meeting with each to begin specific project planning on their current and proposed work in the near future.

Late A. M.

Met with John Weisenberger to review the current status of planning for the upcoming work with MPS, the consultant for the water treatment facility improvements program. Our main discussion concerned design of Phase 1 of the work. Phase 1 is the upgrading of the facility to achieve compliance with the Department of Health's requirements, and to better meet the demands of the current customers.

General

This group of meetings was designed to help formulate steps needed to begin planning and scheduling for current capital improvement projects. There were about 115 projects, some small, some very large, included in the recently superseded five year plan. I shall obtain an updated list for fy 94 to fy 98 and work from it with each cost center manager.

We shall begin this planning soon with Mike Mansfield , Don Berry, and Kevin Mackey. I will be in touch with each to set a mutually acceptable date for our initial meetings. I shall also confirm my next meeting with Mr. Watts for Friday, July 15, 1994 (wd 392).

Attachment A: meeting notes for Tuesday, May 10, 1994 Ralph J. Stephenson, P. E.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
June 20, 1994

Report #05: City of Flint Department of Public Works
Capital Improvements Overview Committee work
Flint, Michigan

Dates of meetings: Wednesday, July 6, 1994 (wd 385)

Locations of meetings: DPW conference rooms at City Hall and Flint Water Plant.

Those attending:

A. M.
- Kevin Mackey - Building maintenance
- Ralph J. Stephenson, P. E. - Project management consultant

P. M.
- John Weisenberger - Water Plant Supervisor
- Ralph J. Stephenson, P. E. - Project management consultant

Actions taken:

A. M.

- Met with Kevin Mackey, and reviewed the
- Reviewed methods of improving the use of the capital improvement program material with interview group A.

- Discussed planning processes that might be appropriate for each of the individual capital improvement projects with interview group A.

Friday, May 13, 1994 (wd 349)

- Met with Mr. Watts, Director Department of Public Works and discussed current work on the planning and scheduling of the cost center project work.

- Reviewed material with Mr. Watts from current interviews with the cost center managers.

Thursday, June 16, 1994 (wd 372)

- Met individually with Mike Mansfield, Mattie Jones, Booker Houston, and Roy Zietz, interview group B, to review capital improvements program format and content.

- Discussed how to improve the use of the capital improvement program material with interview group B.

- Discussed how to better plan the cost center manager's capital improvement projects within the structure of a capital improvements program with interview group B.

Friday, June 17, 1994 (wd 374)

• Met with Mr. Watts, Director Department of Public Works, and Mr. Hans Kuhlmann, Deputy Director of Public Work. Reviewed current work on the formatting, planning and scheduling of the cost center project work.

• Reviewed current cost center manager interview material with Mr. Watts and Mr. Kuhlmann.

• Reviewed the immediate future course of action for capital improvement planning with Mr. Watts and Mr. Kuhlmann.

• Met with John Weisenberger, Water Plant & Facilities Supervisor to discuss current status of new Port Huron supply project, and how best to plan individual projects within the Water Plant and Facilities cost center 0394.

Summary:

Tuesday, May 10, 1994 (wd 346)

This group of meetings was for the prime purpose of discussing the capital improvements program format and content individually with the cost center managers. It was felt appropriate to conduct individual sessions with each cost center manager to allow a free interchange of information leading to the planning for each project in their five year plan. Meeting notes taken during the session are enclosed with this report and entitled attachment A.

I have designated this series of meetings as interview group A. Those interviewed generally have a strong interest in the capital programming and budgeting system. They, however, have limited application for the present system of displaying data.

Reviewing the five year program for fy 93 through fy 97, dated March 3, 1994 indicates that for cost centers 0372 (traffic engineer - Don Berry), cost center 0381 - waste collection - Dennis Owens), and cost center 0340 (building maintenance - Kevin Mackey) there are 11 projects, all in cost center 0340.

However it appears that the contribution each cost center manager has the potential to make to the total city engineering effort is considerable. It is possible that the perception of the capital budgeting process and of the five year planning effort by the cost center managers could be altered, particular for those whose capital improvement budgets are low, but who still are responsible for considerable expenditures of city funds.

This matter will be considered as active planning of each capital project proceeds in the near future.

Friday, May 13, 1994 (wd 349)

Mr. Watts and I met for our regular monthly review of planning work. We discussed the results of the initial interviews on Tuesday, May 10, 1994 (wd 346) with selected cost center managers, and Mr. Watts commented on the meeting notes prepared as a result of those interviews.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
June 20, 1994

Mr. Watts desires the cip planning and scheduling material to be for Department of Public Works projects and expenditures only. External interrelations with other departments and agencies are important, but the five year program presently being established should center mainly on activities of the DPW managers and staff. It should particularly focus on planning, scheduling and tracking their department's work effectively.

Mr. Watts requested that the next series of interviews include Mike Mansfield, Mattie Jones, and Booker Houston.

Thursday, June 16, 1994 (wd 372)

At this series of cost center manager interviews I spoke with Mike Mansfield (cost center 0312 - engineering), Mattie Jones (cost center 0314 - accounting), Booker Houston (cost center 0392 - water office), and Roy Zietz (cost center 0395 - water pollution control facility). This is designated below as interview group B.

I set the objective of the sessions by defining my work as being to to provide a currently accurate and monitorable course of action for each cip project defined in the capital program improvements budget.

In the interviews and meetings we concentrated on several basic questions that are critical to most good planning, scheduling, and tracking systems. These are:

a) How could the cost center managers best set their priorities?

b) How should the information be inputted, translated & used?
   (1) Inputting
   (2) Translating
   (3) Using

c) Who is to input

d) Who is to translate?

e) Who is to monitor and track?

f) How can the coding of the cip program be improved over the present coding?

During my discussions with interview group B several items were mentioned that should be considered in the systems design. Some of these are listed at random below:

a) In many cases a cip need is identified only when a crisis arises. This rushes solutions.

b) Advance information is not always available for accurate input to the cip.

c) Need a good pavement plan of action.

d) Need a good water distribution plan of action.

e) Need a good waste water collection plan of action.

f) Need a good storm water collection plan of action.

g) Need a good rating systems to set infrastructure priorities.

h) Effective project management requires the following to be answered:
(1) Who's managing?
(2) Who's responsible?
(3) Who's in the authority position?
(4) Who's liable?

i) Classes of project funding influence their management.
(1) All third party funding.
(2) Some third party funding.
(3) No third party funding.

j) Need a good coding system to permit effective data storage, retrieval and use.

k) A new billing system is one of the major accounting cip line items.

l) Should consider how the DPW cis system interfaces with the city cis system.
(cis - customer information system.)

m) Need a definition of what a DPW cis system might do.

n) Need a priority assignment system that relates to community needs.

o) Consideration of staff retirements and the management needs of their replacements will affect cip performance and results.

p) Need to capture all data about the projects that are to be included in cip. Of

q) Work in setting a good planning, scheduling, and tracking system should be heavily concentrated on during July, August, and September, 1994.

r) A usable system of planning, scheduling, and tracking must accommodate periodic review and revision as needed.

Friday, June 17, 1994 (wd 374)

Early A. M.

Met with Mr. Fred Watts and Mr. Han Kuhlmann, the new Department of Public Works Deputy Director for our regular review of the capital improvements planning, scheduling, and tracking system, and the

Port Huron water supply program.

Mr. Watts first reviewed the work being done by the overview committee with Mr. Kuhlmann,. I then summarized the interviewing done to date and the direction being followed in bringing the cip planning and tracking system on line.

It appears presently that the major components of the basic system are best defined by three major components:

a) The input.
b) The translations and management tools.
c) The output.

Input is the information that is provided by the cost center managers about their separate line item projects to be placed in the five year capital improvement program. This information must be authentic, complete, and take into full account the needs for the project, and how these needs are to filled by the project execution.

Translations and management tools are the documents that result from the input assembly and analysis. The tools must be usable, and relate specifically to the cip management needs of the director and the cost center managers. Included will be the plans, schedules, tracking documents, and narratives prepared from the cost center manager's input.

Output is basically the five year plan containing the full information about each project as identified by the cost center managers and planned by them in conjunction with the project management consultant.

There will be further derivations and interpretations of the basic three part system outlined above. However these are to evolve out of the basic system as it is brought on line.

Mr. Watts, Mr. Kuhlmann, and I discussed the work to be done in actually planning the projects. They have suggested I begin active planning with Mike Mansfield (cost center 0312), Don Berry (cost center 0372), and Kevin Mackey (cost center 0372) for projects within each of their centers. I shall contact these three managers, and set a planning meeting with each to begin specific project planning on their current and proposed work in the near future.

Late A. M.

Met with John Weisenberger to review the current status of planning for the upcoming work with MPS, the consultant for the water treatment facility improvements program. Our main discussion concerned design of Phase 1 of the work. Phase 1 is the upgrading of the facility to achieve compliance with the Department of Health's requirements, and to better meet the demands of the current customers.

General

This group of meetings was designed to help formulate steps needed to begin planning and scheduling for current capital improvement projects. There were about 115 projects, some small, some very large, included in the recently superseded five year plan. I shall obtain an updated list for fy 94 to fy 98 and

work from it with each cost center manager.

We shall begin this planning soon with Mike Mansfield , Don Berry, and Kevin Mackey. I will be in touch with each to set a mutually acceptable date for our initial meetings. I shall also confirm my next meeting with Mr. Watts for Friday, July 15, 1994 (wd 392).

Attachment A: meeting notes for Tuesday, May 10, 1994 Ralph J. Stephenson, P. E.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
July 25, 1994

Report #06: Report on Capital Improvements Reporting System
Capital Improvements Overview Committee
Flint, Michigan

To: Fred D. Watts, P. E. - Director Department of Public Works
Hans Kuhlmann - Deputy Director of Public Works.

From: Ralph J. Stephenson, P. E.

Re: Planning and scheduling system recommendations for City of Flint
Capital Improvements Program (cip).

History of the Capital Improvement Overview Committee activities

Work began on the current Capital Improvement Program planning and scheduling system in August, 1993. A Scheduling Overview Committee was appointed by Mr. Watts, Director of the Department of Public Works and Utilities. The Scheduling Overview Committee was chaired by John Weisenberger, Water Plant Supervisor. Ralph J. Stephenson, P. E. was appointed the project planning and scheduling consultant to the City.

The committee task was to assist Mr. Watts in planning the project management consultant's assignments, and to advise Mr. Watts of the consultant's progress. The committee began active work in October, 1993.

Several meetings were held with various members of the CIP Scheduling Overview Committee to discuss Capital Improvements Scheduling and related subjects. Meetings held and cip related topics discussed are summarized below. Details of each meeting are provided in the meeting notes for each session.

Monday, October 11, 1993

- Discussed general approach to planning and scheduling Capital and O & M program.
- Defined preliminary mission, goals and objectives of Overview Committee.
- Reviewed five year capital improvement program.
- Identified information needed for planning work, and resources needed for the work.
- Set data field types for tabulating capital and O & M information.
- Selected 12 projects on which to test planning format.
- Formulated and tested preliminary data display format.
- Prepared and tested bar chart format for displaying project data.
- Began preparing glossary of terms to be defined for planning work.

Wednesday, March 30, 1994

- Discussed purposes and responsibilities of the cip overview committee.
- Made preliminary cip overview committee assignments.
- Reviewed cip work responsibilities of cost center managers.
- Discussed related reference materials available for work of overview committee.

Tuesday, April 12, 1994

- Discussed content of MPS proposal for concept package and construction document preparation for new Lake Huron water supply system.
- Reviewed implications of proceeding under various options outlined in MPS design proposal.
- Defined options to be modeled and tested for new Lake Huron water supply system design
- Prepared preliminary network models for option A and option C work under MPS proposal for concept and construction document preparation.

Wednesday, April 13, 1994

- Reviewed and defined cip overview committee responsibilities.
- Discussed work assignments of project management consultant.
- Discussed operating methods for cip overview committee.
- Discussed and formulated preliminary content for use of cip master project data file.
- Began defining format of cip summary project data file and cip book file.

Thursday, April 14, 1994

- Met with Director and cost center managers, and briefly discussed cip information program.

Tuesday, May 10, 1994

- Met individually with Don Berry, Dennis Owens, and Kevin Mackey, interview group A, and discussed capital improvements program format and content.
- Reviewed methods of improving the use of the capital improvement program material with interview group A.
- Discussed planning processes that might be appropriate for each of the individual capital improvement projects with interview group A.

Friday, May 13, 1994

- Met with Mr. Watts, Director Department of Public Works and Utilities and discussed current work on the planning and scheduling of the cost center project work.
- Reviewed material with Mr. Watts from current interviews with the cost center managers.

Thursday, June 16, 1994

- Met individually with Mike Mansfield, Mattie Jones, Booker Houston, and Roy Zietz, interview group B, to review capital improvements program format and content.
- Discussed how to improve the use of the capital improvement program material with interview group B.
- Discussed how to better plan the cost center manager's capital improvement projects within the structure of a capital improvements program with interview group B.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
July 25, 1994

Friday, June 17, 1994

- Met with Mr. Watts, Director Department of Public Works and Utilities, and Mr. Hans Kuhlmann, Deputy Director of Public Work. Reviewed current work on the formatting, planning and scheduling of the cost center project work.
- Reviewed current cost center manager interview material with Mr. Watts and Mr. Kuhlmann.
- Reviewed immediate future course of action for capital improvement planning with Mr. Watts and Mr. Kuhlmann.
- Met with John Weisenberger, Water Plant & Facilities Supervisor to discuss current status of new Port Huron supply project, and how best to plan individual projects within the Water Plant and Facilities cost center 0394.

Wednesday, July 6, 1994

- Reviewed cost center 0340, facilities capital improvement program.
- Discussed methods of planning and scheduling.
- Assigned planning priorities to cost center 0340 capital improvement projects.
- Prepared network model for project #01-101-0304, Chiller replacement and upgrade.
- Discussed current status of Lake Huron Water Supply program concept study.
- Monitored current status of work on Lake Huron Water Supply program.
- Identified proposed components of phases 1, 2 and 3 of Lake Huron Water Supply Program.

Capital improvements planning and scheduling review and analysis:

Currently the Department of Public Works and Utilities Five Year Capital Improvement Program is presented in a data base document that gives individual project information (records) in several columns of data (fields).

Project records consist of all projects identified by cost center managers that they desire to be budgeted, planned and accomplished over a moving five year time span starting from the year in which the CIP was prepared.

Project information fields consist of data felt important to show about each project. This information is also provided by the cost center managers.

The projects and field data are furnished by the cost center managers to Mr. Mike Lunn, on the staff of the Water Pollution Control Cost Center. He then inputs the data and prepares the five year Capital Improvement Plan for submission, review and approval of the Department of Public Works and Utilities staff and management.

Fields currently being used in the CIP five year report are:

- **Project name** - assigned by cost center manager and/or whoever prepares the input.
- **Fund** - preset by government requirements.
- **Cost center**

1. Staff
   0310 - Administration
   0314 - Accounting
2. Utilities division
   0391 - Water administration
   0392 - Water office
   0393 - Water service center
   0394 - Water plant and facilities
   0395 - Water pollution control facility
3. City engineer
   0311 - City Engineer
   0312 - Engineering division
   0372 - Traffic engineering
   0321, 0322, 0323, 0324 - Building and safety inspection
   0340 - Building maintenance
   0381 - Waste collection
   0361 - Street maintenance

• **Cost center priority** - funding characteristics that determine the priorities on projects being considered - assigned by cost center managers.
   A - Current project - continuation funding requirements.
   B - New prioritized - funding required.
   C - Funding is not a current fiscal year issue.

• **Impetus type** - reason to initiate the project - assigned by cost center managers.
   I. Regulatory compliance
   II. Economic savings projected
   III. Potential litigation/safety
   IV. Obsolescence
   V. Contract expiration

• **Fiscal year funding requested & amount** - Assigned by cost center managers for the current fiscal year and the following four years.

The above fields and the accompanying data are currently reproduced in the CIP five year report when it is printed for use by the DPW staff and management. The data base program in which this information is stored has the capacity to store almost unlimited project related data as might be desired.

Additional data fields that might be of interest to those using the system include:

• **Amount of fiscal year funding granted** - how much can we spend?
• **Amount of fiscal year funding actually expended** - what have we spent as of this cip monitoring date?
• **Impetus narrative** - narrative details of why we are doing this project?
• **Project background** - narrative project history and rationale for including the project in the CIP.
• **Benefits of project** - narrative statement of the City of Flint benefits from doing the project.

- **Funding sources** - identification of the actual agencies providing the total funding and its components.
- **Names of agencies and people to be involved in project** - listing of duties, responsibilities, and authority related to the project, of those inside and outside of the City of Flint.
- **Short and long term expectations** - narrative of what project consequences both positive and negative are expected to result from the project being completed
- **Citizen comments on project related matters** - narrative of whatever citizen comment and input have been made and are available regarding the project.
- **Regulatory needs for information** - narrative of the requirements of regulatory agencies for any information about the project as it is planned and implemented.
- **Political needs for information** - narrative of political agency needs for any information about the project as it is planned and implemented.
- **Resources needed** - type and requirements
  (1) Internal
    (a) Internal operations staff - those doing the work
    (b) Internal support staff - those assisting to do the work
    (c) Internal advisory staff - specialized action and advice
    (d) Other?
  (2) External
    (a) Consulting operational and technical
    (b) Consulting support - administrative and legal
    (c) Involved governmental agencies
    (c) Other?
- **Resources available** - type and qualifications
  (1) Internal
    (a) Internal operations staff - those doing the work
    (b) Internal support staff - those assisting to do the work
    (c) Internal advisory staff - specialized action and advice
    (d) Other?
  (2) External
    (a) Consulting operational and technical
    (b) Consulting support - administrative and legal
    (c) Involved governmental agencies
    (c) Other?

From our early meetings a selected few of these fields were incorporated into the current data base program by some of the cost center managers. However there does not appear to be any consistent department-wide use of the full capacity of the storage and retrieval system currently available.

A required document in which is found many of the above information fields is the Capital Improvement Fund Form. This is a set of data used to justify and apply for funding by the cost center managers.

Information needed to prepare this form includes:

- **Initiating department**
- **User cost center**

- **Project title**
- **Description**
- **Needs addressed by the project**
- **Benefits or impacts**
- **Negative results if not done (short & long term)**
- **Alternatives to funding this project**
- **If or not the project has been included in the cost center's capital budget**
- **Funding source details**
- **Funding requirements by fiscal year**
  Capital costs
  Operating costs
- **Details of capital costs and operating costs**

Mr. Mike Lunn of the Water Pollution Control Department who has been working on this input format says that the Fund Form data already inputted is stored in a departmental word processing file, and can be easily modified as desired by a cost center manager. He also points out that once the fund forms are completed, the data can be easily recalled and used to create memos and other reporting and monitoring records and reports.

An example of this capital improvement fund form is seen in the water pollution control five year capital improvement book. This book contains a listing of 37 capital improvements and details of each as outlined in the above information list.

The information availability within the above system of data collection, storage, and retrieval makes it possible to extend the capital improvements information system to a level of planning, scheduling, and monitoring that will satisfy most requirements defined in my assignment on this project to accomplish with the Director and the committee.

The responsibilities of the Capital Improvements Program Overview Committee and me have been defined in several working meetings with the committee and with Mr. Watts. In general the mission and assignment has been to - **keep DPW projects on target in relation to time, cash flow, funding, phasing, and management direction.**

The responsibilities were stated in a memo to Mr. Watts from me on April 20, 1994 in which the Capital Improvements Program Overview Committee was charged as follows:

> "The major responsibility of the Capital Improvements Program (cip) Overview Committee is to assist the consultant to implement a program of action with the cost center managers to accomplish the following:
>
> 1. To provide and assign preliminary priorities to cip projects as set by the cost center managers from budgets prepared by cost center managers. This is to be done by the overview committee for the initial list only (dated March 3, 1994). This task is now complete.
>
> 2. To collect capital improvement program (cip) file information for each project from each cost center manager. This information is to be entered in the Department of Public Works and Utilities master file by the group recommended by the Director. The format is to be similar to

that prepared by Mike Lunn for the five year cip dated March 3, 1994.
3. To collect and review data for inclusion in a master cost center capital improvement project file book for the Director.

4. To assist to prepare a data base summary of the capital improvement project file for use by the cost center managers and the Director.

5. The project management consultant is to outline & conduct orientation briefings (with the assistance of the cip overview committee) for cost center managers and their staff on how to use the cip file for:

(1) Historical reference use.
(2) Planning expenditures
(3) Project record keeping.
(4) Project tracking and monitoring.
(5) Project costs.
(6) Analyzing trends in actual vs. planned costs and time.

6. To provide a resource to assist cost center managers and the project management consultant to keep the DPW cip projects on a monitored, predictable time schedule within budgeted targets, and to identify the interactions between all projects in the cip.

7. To aid the Director to determine, through periodic recommendations to the project management consultant, how the cip project list format and content can be upgraded to help improve DPW cost center effectiveness.

8. To aid the Director to determine demonstrated value added by the efforts of the DPW cost centers to the City of Flint.

9. To develop and implement a procedure with the project management consultant for preparing the annual cip project file by cost center, during the budget preparation period, for the next fiscal year, and for the succeeding five years, all within budget constraints."

In our work toward the above responsibility targets we prepared a selected sample project data bar chart translation. The bar chart translation was discussed in my report #01 to Mr. Watts, dated October 18, 1994. A copy, labeled Attachment A, accompanies this report. The bar chart format, with refinements, has considerable merit for showing the large overview of the capital improvement program.

Mr. Watts suggested that I could best implement the program of overview planning by first outlining the work of the overview committee with each of the cost center managers. From this he suggested I develop a course of action to plan each of the projects contained in the current Capital Improvements Program.

Accordingly, I met with several of the cost center managers and discussed the methods we recommended be used to plan, schedule, and track DPW projects. Those cost center managers with whom I discussed the format and methodology included:

Don Berry - Traffic Engineering
Dennis Owens - Waste Collection
Kevin Mackey - Building Maintenance
Mike Mansfield - Engineering Division
Mattie Jones - Accounting
Booker Houston - Water Office
Roy Zietz - Water Pollution Control Facility
John Weisenberger - Water Treatment Plant and Facilities

Detailed planning for individual projects proceeded somewhat concurrently with the interviews and a preliminary network model was prepared of the Phase 1 required work design for the water supply reliability (Lake Huron water supply) program. This network model is currently being used to monitor the project as it proceeds through conceptual studies.

I also prepared a network model of the building chiller replacement and upgrade for City Hall with Kevin Mackey. This plan of work is preliminary only and should be put into final form before using it as project plan of action.

The Lake Huron water supply (water supply reliability) project is currently a very high priority project and I was directed by Mr. Watts in his letter to me of June 24, 1994 to provide an update of the status of the CIP program work, and to now concentrate on the water study. I have started this and have scheduled planning meetings with Hans Kuhlmann, John Weisenberger, and Trevor Wagonmaker of MacNamee, Porter, and Seeley.

In accordance with Mr. Watts request, my recommendations for further work on the CIP planning, scheduling and monitoring work are listed below.

Recommendations:

The following steps should be taken as soon as possible. Many of the early items are already being implemented, and the remaining actions to the full recommended operating CIP planning, scheduling, tracking system should be relatively easy to achieve. I recommend:

1. That the Flint Department of Public Works and Utilities actively pursue the definition, costing, planning, scheduling, translating, and monitoring of all capital improvement projects for at least the current year and the succeeding four years.

2. That the cost center managers be made responsible for preparing a detailed definition of each capital project.

3. That for each Capital Improvements Program project the cost center manager appoint a suitable individual (project manager) to be responsible for planning, scheduling, translating, and monitoring of each capital improvement project in his or her five year Capital Improvement Program.

The CIP project manager would prepare a project narrative plan of action from the cost center manager's project definition. This narrative plan of action should contain the following

information:

Project Narrative Plan of Action (PNPA)

- Initiating department
- User cost center
- Project title
- Project number
- Description
- Needs addressed by the project
- Benefits or impacts
- Negative results if not done (short & long term)
- Alternatives to funding this project
- If or not the project has been included in the cost center's capital budget
- Funding source details
- Funding requirements by fiscal year
  - Capital costs by year
  - Operating costs by year
- Details of capital costs and operating costs

The project narrative plan contains information similar to that now required to be provided for project justification in the Capital Improvement Fund Form.

4. That the project narrative plan of action be reviewed and approved by the cost center manager responsible for its implementation. The project information should then be inputted to the Summary Capital Improvement Program.

This summary is similar to the current Capital Improvement Program Form. In this form the information fields are as follows:

Summary Capital Improvement Program (SCIP)

- Project name
- Fund
- Cost center
- Cost center priority
- Impetus type
- Fiscal year funding requested & amount

5. That each cost center manager's proposed capital improvement program be submitted to the Director in the Project Narrative Plan of Action (PNPA), and the Summary Capital Improvement Program (SCIP).

The Director would be responsible for commenting, requesting revisions, and approving the submission.

6. That when the submission is approved by the Director, the cost center manager in conjunction with the project manager revise the Project Narrative Plan of Action, and the Summary Capital

Improvement Program to reflect the Director's comments, and suggested revisions. The two documents are then ready to issue for use by the department staff and others.

7. That at the conclusion of this process for each project, the cost center manager and the project manager prepare a time scaled bar chart translation.

The translation should be similar to that enclosed with this report as Attachment A. The time scaled bar chart is a very good graphic tool to show macro information as needed in the five year plan. It is easily updated and can be used to make major time scale revisions to project data and timing.

8. That the Project Narrative Plan of Action, the Summary Capital Improvement Program, and the Summary CIP bar chart be used by the cost center managers in conjunction with the project manager assigned to the work to prepare detailed network models, schedules, and translations of each of the projects contained in the PNPA and the SCIP.

These network models would be similar to the network model prepared by Kevin Mackey and me for the City Hall chiller replacement and upgrade. This network was enclosed with my report #05 to Mr. Watts.

9. That the CIP projects be monitored on a frequency consistent with the scale of the project, and the total time required to complete the project.

Monitoring consists of comparing the project status with the proposed plan of action and evaluating its degree of adherence to the plan. If major deviations begin to disrupt the project work, the project plan should be updated and reissued.

Short projects of one year or less should be formally monitored each two to five weeks. Project of from one to two years should be monitored each three to six weeks. Projects longer than two years should be monitored each five to eight weeks depending on the current phase and condition of the project.

10. That each year when the Capital Improvements Program budget is prepared the cost center managers make a major review of the project data, and update all project related documents to reflect current plans for the cost center's capital program.

The recommendations above are exacting and time consuming. However we are considering the expenditure of several millions of dollars of public funds for which accountability, planning excellence, and competent implementation are expected.

Once the early formatting is set for the methodology of the program, the successive fiscal year plans should be easily derived from the previous year's information if the project management is done well.

Attachment A:
Bar chart

Ralph J. Stephenson, P. E.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
July 30, 1994

Report #07: City of Flint Department of Public Works
Lake Huron Water Supply (water supply reliability) program
Flint, Michigan

Dates of meeting: Friday, July 15, 1994 (wd 392)

Locations of meetings: DPW conference rooms at City Hall and Water Plant.

Those attending:

Early A. M.

- Fred D. Watts, Jr. P. E. - Director of Public Works and Utilities
- Hans Kuhlmann - Deputy Director of Public Works and Utilities
- Ralph J. Stephenson, P. E. - Project management consultant

Late A. M. and all P. M.

- John Weisenberger - Supervisor, Water Treatment Plant and Facilities
- Robert Carlyon - Assistant Supervisor, Water Treatment Plant and Facilities - in meeting short time only
- Ralph J. Stephenson, P. E. - Project management consultant

Actions taken:

Early morning

- Met for regular monthly CIP and water supply review meeting with Mr. Watts and Mr. Kuhlmann.
- Met with Mr. Kuhlmann and reviewed current Lake Huron Water Supply assignment and the process of implementing it.

Late morning and all afternoon

- Reviewed current Lake Huron Water Supply assignment and the process of implementing it with John Weisenberger.
- Reviewed current status of design work on Lake Huron Water Supply program.
- Discussed scope of work in each phase of the design work, and planned how best to implement the planning and monitoring work most effectively.

Summary:

Please note and correct two errors in my Report #05, dated July 10, 1994.

On page 3 is a description of design work covered under the MPS contract as defined in their Attachment B dated April 13, 1994. The heading to the cost tabulation presently reads:

"Phase 1 - **Required** work covered under MPS contract as defined in Attachment B dated April 13, 1994. Costs shown are estimated construction costs unless otherwise noted. The following is for concept drawings only!"

On the same page 3 is described a cost item (17) that presently reads:

"(17) $11,300,000 - Estimated total construction cost for required work only that is covered in MPS Attachment B. Only covers concept design - no construction working documents included."

Please delete the last sentence in each of these descriptions.

Morning meeting

Met with Mr. Watts and Mr. Kuhlmann to review the current status of the total capital improvements plan. Mr. Watts gave me a letter from him dated July 15, 1994 (wd 392) that outlined two interrelated vision statements about my current contract with the City of Flint.

The first concerned the Water Supply Reliability (second pipeline). This project is now to be my first consulting priority. Mr. Watts said in his letter that my work on the water supply program is to provide a means of obtaining a scheduling plan that would serve as an oversight management tool for the City of Flint as it manages the project.

My second consulting priority is to work on the DPW & U Capital Improvement Program. My specific assignment is to provide a means to readily see the interactions of financing, manpower, restrictions, and key deadlines on the scheduling of various projects in the program. Mr. Watts, however, said that my preliminary work on the CIP program is to be discontinued until he has reviewed a summary report from me on the program. This report entitled Report #06: Report on Capital Improvements Reporting System, and dated July 25, 1994, has been sent to Mr. Watts.

Mr. Watts pointed out in his letter that the resource team's work under John Weisenberger is now complete and the team has been released to do their regular duties. Mr. Hans Kuhlmann, Deputy Director has been appointed to be my contact man on the water program.

We discussed the major details of how I am to work with Mr. Kuhlmann and John Weisenberger in the future. Mr. Watts desires that I be at all planning meetings for the water reliability work. He also wants me to validate and confirm phasing of the work on the water system as it proceeds.

The City of Flint management of the working effort is to rest with Mr. Kuhlmann and Mr. Weisenberger. Also involved in the planning process, as needed and as appropriate are to be Randy McConnell, and Robert Carlyon, and on an ongoing basis, the design consultant McNamee, Porter, and Seeley. Mr. Watts and Mr. Kuhlmann are to be provided with all reports and recommendations I prepare. Further distribution will be done by them.

After our meeting with Mr. Watts, I met briefly with Mr. Kuhlmann to discuss implementation of the program outlined in our earlier morning meeting. We discussed the frequency of meetings, the agenda items to include in the meetings, and the content of the CIP summary report I am to provide to Mr. Watts.

After completing my discussions with Mr. Kuhlmann, I met with John Weisenberger at the water plant. Mr. Kuhlmann was not able to attend this session.

We discussed Mr. Watts letter of July 15, 1994, a copy of which was sent to Mr. Weisenberger. From our assignment in the letter we prepared an agenda as shown in the attached meeting notes of Friday, July 15, 1994 (wd 392).

Afternoon Meeting:

Mr. Weisenberger and I reviewed the current status of design and planning work on the project with Mr. Carlyon, the Assistant Supervisor of the Water Plant and Facilities. We also reviewed and summarized the program assumptions for various design phases of work. The fee scope structure for McNamee, Porter, and Seeley's work as outlined in Attachment C of their proposal letter dated April 13, 1994 (wd 327) is as follows:

Phase 1A Improvement Plan - design

Conceptual design for required-work and update-work items	$ 83,000
Preliminary design for required-work and update-work items	$ 307,500
Final design for required-work items	$ 101,250
Design funding currently approved by change order	**$ 491,750**

Phase 1B Improvement Plan - design

Final design for upgrade-work items	$ 101,250
Construction, engineering for required-work and update-work items	$ 467,000
Additional design funding required to complete phase 1 construction.	**$ 568,250**

Please note that I have divided the items included in Phase 1 design into two sections, Phase 1A and Phase 1B.

Phase 1A includes design and engineering work currently funded by the City under a change order to MPS. It brings design work to completion of conceptual and preliminary design for both required-work and upgrade-work items, and to completion of final design of required-work items.

Phase 1B includes design and engineering work not yet funded, but needed to complete final design for update-work, and design needed for all Phase 1 construction engineering work through completion of Phase 1 construction.

We also discussed the scope of our planning work to be done over the next few weeks. Mr. Weisenberger and I structured the meeting agenda as follows:

Phase 1

Planning meetings - middle of month

Those expected to attend
- Hans Kuhlmann
- John Weisenberger
- Randy McConnell - as needed
- Bob Carlyon
- Trevor Wagonmaker - MPS
- Ralph J. Stephenson

Agenda for Phase 1 planning meetings
- To prepare summary and detailed network models of all Phase 1 work to be done by MPS and the City of Flint.
- To monitor and discuss current progress of Phase 1 work measured against the plans and schedules.
- To update Phase 1 work as required by progress and project monitoring.

Progress meetings - last week of month

Those expected to attend
- Hans Kuhlmann
- John Weisenberger
- Randy McConnell - as needed
- Bob Carlyon
- Trevor Wagonmaker - MPS
- Ralph J. Stephenson

Purpose of Phase 1 progress meetings

- For MPS to submit and review and revise, if required, a progress report to the COF for preparation of Council referral report. This report is due to Council the first Council meeting of the month.

Phases 2 and 3

Planning meeting - middle of month

Those expected to attend
- John Weisenberger
- Hans Kuhlmann
- Bob Carlyon
- Trevor Wagonmaker - MPS
- Ralph J. Stephenson

Purposes of Phases 2 and 3 planning meetings

- To further define, revise and refine scope of work anticipated to be done in Phases 2 and 3.
- To prepare summary plans and schedules for Phases 2 and 3.

I shall be in touch with Mr. Kuhlmann and John Weisenberger soon to set the next set of planning and progress meetings.

enclosure: meeting notes for 07/15/94

Ralph J. Stephenson, P. E.

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
August 17, 1994

Report #08: City of Flint Department of Public Works
Lake Huron Water Supply (water supply reliability) program
Flint, Michigan

Dates of meeting: Thursday, August 4, 1994 (wd 406)
Friday, August 12, 1994 (wd 412)

Locations of meetings: DPW conference rooms at City Hall and conference room at Water Plant.

Those attending:

Thursday, August 4, 1994 (wd 406)

- Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
- Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
- John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
- Ralph J. Stephenson - Consultant

Friday, August 12, 1994 (wd 412)

Early A. M.

- Hans Kuhlmann, P. E. - Deputy Director, Department of Public Works and Utilities
- John Weisenberger - Supervisor, Water Treatment Plant & Facilities.
- Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
- Bob Carlyon - Assistant Supervisor, Water Treatment Plant & Facilities.
- Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants
- Jeff Reynhout, P. E - Project Manager, McNamee, Porter & Seeley - consultants
- Ralph J. Stephenson, P. E. - Co, consultant

Late A. M. and all P. M.

- John Weisenberger - Supervisor, Water Treatment Plant and Facilities
- Robert Carlyon - Assistant Supervisor, Water Treatment Plant and Facilities - in meeting part time only.
- Richard N. Seaman, P. E. - Senior Civil Engineer - Flint DPW
- Glenn S. Burkhardt, P. E. - Senior Vice President, McNamee, Porter & Seeley - consultants - in meeting part time only
- Jeff Reynhout, P. E - Project Manager, McNamee, Porter & Seeley - consultants - in meeting part time only.
- Ralph J. Stephenson, P. E. - Project management consultant

Actions taken:

Thursday, August 4, 1994 (wd 406)

- Reviewed letter dated July 15, 1994 from Kathleen Leavey Deputy Director of DWSD to Mr. Fred D. Watts, Jr. P. E.
- Reviewed McNamee, Porter and Seeley scope of work for Lake Huron Water Supply program.

Friday, August 12, 1994 (wd 412)

Early A. M. meeting

- Reviewed current status of McNamee, Porter and Seeley work on Lake Huron study.

Late A. M. and P. M. meeting

- Continued overview planning for Lake Huron Water Supply project.

Summary:

Thursday, August 4, 1994 (wd 406)

This was our regular monthly meeting with the Department of Public Works to review the status of the various projects upon which I am engaged. Mr. Watts was represented at this meeting by Mr. Hans Kuhlmann, the Deputy Director.

We discussed the status of work on the water program, with initial attention being given a letter dated July 15, 1994 from Kathleen Leavey, Deputy Director, City of Detroit Water and Sewer Department (DWSD) to Mr. Fred D. Watts, Jr. P. E.

In this letter Ms. Leavey commented on several matters relative to the recent MPS raw water report. Points covered by Ms. Leavey include:

- Asked what second source would be provided if Flint did follow the plan proposed.
- Said the proposed blending of Flint water with DWSD water is not acceptable under the terms of the Water Service Agreement. Blending may be allowed under an emergency situation as described in the agreement.
- Questioned accuracy of the computations in the report.
- Questioned validity of the estimates contained in the report.
- Questioned estimated costs for right of way.
- Said the course of action recommended by MPS would cost twice as much as a second source should cost.
- DWSD didn't review the cost estimates for later phases.
- Invited Flint to discuss the second feed to Flint from DWSD in accordance with a DWSD prior proposal.

We next reviewed the scope of MPS work under their current contract with the City of Flint. The discussion was primarily to brief Mr. Kuhlmann and Mr. Seamen on the scope of McNamee Porter, and Seeley's current work.

Friday, August 12, 1994 (wd 412) - MPS planning meeting

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
August 17, 1994

Early morning meeting

The agenda followed in this planning meeting was substantially that prepared by MPS as a format for their regular monthly planning meetings. Subjects discussed included:

- Flint River water quality
- Solids handling alternatives
- Schedule review
- Near term planning needs
- Performance feedback

The content of each of these agenda item discussions is summarized in the attached meeting notes for this session. Information in this set of meeting notes was reviewed with the MPS and the Flint staff during the afternoon session and minor corrections made as required.

It presently appears that expiration of the current Flint contract with the DWSD is in December of 2000. This date should be confirmed since it is a pivotal date for projecting completion of the new planned facilities.

At the morning meeting we also discussed a schedule of work for the new facilities, and the assumptions to be made for early preliminary cost estimates. This material will be updated and refined as the MPS work proceeds.

Mr. Kuhlmann requested that in subsequent meetings and reports we try to use full phrases in place of initials to help those not familiar with the meanings of the initials get a quicker and better understanding of the data being presented. In addition Mr. Kuhlmann asked that any statistical material being presented orally be accompanied by a written summary of the data to help in following the discussion.

There was some discussion of the need for an informational program to help keep those involved, or interested, in the project up to date and current with authentic progress and technical information. This matter will be discussed in subsequent meetings. However Mr. Kuhlmann suggested that we might consider a monthly one page update for internal distribution to help in communicating about project progress with others in the Flint city government.

We next discussed methods of placing the remainder of Phase 1, 2 and 3 design work under contract. This matter is currently being studied by the Flint DPW staff and the MPS project staff. MPS will submit a draft proposal for the remaining Phase 1 engineering work by August 26, 1994 (wd 423). This draft proposal will be discussed at our next planning meeting on September 9, 19994 (wd 431).

In addition MPS will submit a draft proposal for Phase 2 and 3 work at the September 9, 1994 meeting.

Late morning and afternoon meeting

After the meeting at City Hall the project team moved to the Water Plant for the remainder of the morning and the afternoon. This later meeting was concerned with planning and scheduling of the total

program encompassed in Phases 1, 2, and 3.
The MPS staff provided some additional timing and phasing input from which Mr. Weisenberger, Mr. Seamen and I prepared a first draft network plan of the total project extending to completion of Phase 3 construction and systems. At this point the entire facility will be ready to begin using Lake Huron water in a City of Flint intake and treatment system.

The preliminary plan of action is shown in the attached network model on Sheet #1, issue #2, dated August 12, 1994 (wd 412). The network was prepared using most of the logic, dates, and durations discussed in our late morning meeting. Some adjustments were made where Mr. Weisenberger, Mr. Seamen, and I felt it appropriate.

All those participating in the planning meetings are encouraged to check this macro view of the total process. The individual tasks that represent the major front end, design and construction actions will be expanded into individual networks as details of the activity are formulated.

The current intent is to refine this model in our planning sessions as the desired phasing and corresponding front end, design and construction actions are defined. Copies of the meeting minutes, and the network are also being sent directly to John Weisenberger, Richard Seamen, Glenn Burkhardt, and Jeff Reynhout. Mr. Weisenberger will provide a copy to Mr. Carlyon.

Our next planning meeting with MPS is scheduled for Friday, September 9, 1994 (wd 431). My next regular meeting with Mr. Watts and Mr. Kuhlmann is scheduled for Friday, September 12, 1994.

enclosure:
- 08/04/94 meeting notes
- 08/12/94 meeting notes
- sht #1, issue #1 network model dated 08/12/94

Ralph J. Stephenson, P. E.

September 23, 1989

Fred Watts, Jr., P.E., Director
Department of Public Works & Utilities
City Hall
1101 S. Saginaw Street
Flint, Michigan 48502

Re: Executive summary - City of Flint/City of Detroit second pipeline work review - from June, 1984 through January, 1988

Dear Mr. Watts:

In June, 1984, Mr. William Ewing, Mr John Weisenberger and I began an analysis of courses of action Flint could take to provide a safe, reliable and affordable second source of water in the event of a dysfunction in their Detroit supplied system. The single source of water to Flint was, and is through a single 72 inch line from Imlay City, Michigan to the Flint water plant on the east side of Flint.

Among major reasons for the study were strong cautions from the Michigan Department of Public Health that a second source of water to Flint was very high on their concerns list.

Our local Flint study extended from June, 1984 through early 1986 and resulted in identification of five courses of action which appeared worthy of further consideration. [1] Most of the identified actions required that Flint conduct in depth reviews of the intent and plans for Detroit's anticipated second water pipeline to Flint with the Detroit Water & Sewerage Department (DWSD).

In March, 1985 a letter was sent to Mayor Young of Detroit from Mayor Sharp of Flint [2] proposing an early start on development of a definite second pipeline plan. Mayor Young responded in August, 1985, agreeing, and appointing Mr. Charlie Williams to represent Detroit in exploratory meetings on this matter. [3] Mr. James Kegler of the DWSD was to direct the technical task force and Mr. William Carney was to direct the finance and rates task force.

In late 1985 the staffs of the Detroit and Flint water departments began meetings of the technical task force to formulate the program in accordance with the desires of Mayor Young and Mayor Sharp. [4]

The main thrust of planning was set in meetings held from December, 1985 through November, 1987. [5] Those participating included management and technical personnel from the DWSD, the City of Flint and Genesee County. Network plans for preliminary study, route selection and land acquisition were prepared by the technical team and the work proceeded within the framework of these action plans. [6]

The result of the technical task force work was a study report, dated January, 1988 [7] and an executive summary report, dated January, 1988. [8] The study showed that the primary functions of the proposed second pipeline were to provide a permanent back up supply for Flint, and to loop a portion of the DWSD's northern transmission system. Construction of the total project was estimated at $104,000,000. [9]

The proposed route began at Walton Boulevard and Giddings Road and proceeded generally north and west

to a connection with the DWSD 72 inch main in Potter Road near Flint. Included was a main in Davison Road west and north to the Flint Water Plant. [10]

Upon issuance of the study report and the executive summary, the technical task force's early assignment was complete. In January, 1988 I also completed my formal involvement with the project technical task force on the preliminary engineering and land acquisition studies pending the next stage of the work in which the City of Flint was to participate.

Attachments:
A - Footnotes
B - Full data file
C - Abbreviations used

Ralph J. Stephenson PE
Consulting Engineer

City of Flint, Michigan
Capital & OM program

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
April 20, 1994

To: Fred D. Watts, Jr., P. E. - Director City of Flint DPW

From: Ralph J. Stephenson, P. E., Project Management Consultant

Subsequent to our discussions this morning re the duties of the cip overview committee, I revised the list of duties and made some grammatical corrections and minor editorial revisions.

The resulting list is shown below.

Would you please review the material and advise as to its appropriateness. If satisfactory, I recommend it be distributed at the Cost Center Manager's TQS meeting on Thursday morning, April 21, 1994. I plan to attend and will be able to stay until 09:00 am.

Today I will be at the water plant until 3:30 pm preparing an agenda of meetings to be held in the near future with the Cost Center Managers.

RESPONSIBILITIES OF THE CAPITAL IMPROVEMENTS PROGRAM OVERVIEW COMMITTEE

The major responsibility of the Capital Improvements Program (cip) Overview Committee is to assist the consultant to implement a program of action with the cost center managers to accomplish the following:

1. To provide and assign preliminary priorities to cip projects as set by the cost center managers from budgets prepared by cost center managers. This is to be done by the overview committee for the initial list only (dated March 4, 1994). This task is now complete.

2. To collect capital improvement program (cip) file information for each project from each cost center manager. This information is to be entered in the Department of Public Works and Utilities master file by the group recommended by the Director. The format is to be similar to that prepared by Mike Lunn for the five year cip dated March 3, 1994.

3. To collect and review data for inclusion in a master cost center capital improvement project file book for the Director.

4. To assist to prepare a data base summary of the capital improvement project file for use by the cost center managers and the Director.

5. The project management consultant is to outline & conduct orientation briefings (with the assistance of the cip overview committee) for cost center managers and their staff on how to use the cip file for:

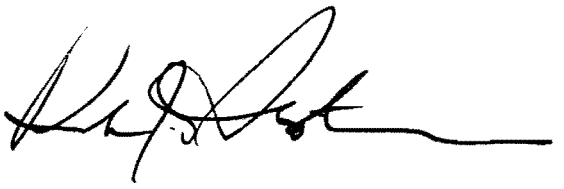
(1) Historical reference use.
(2) Planning expenditures
(3) Project record keeping.
(4) Project tracking and monitoring.
(5) Project costs.
(6) Analyzing trends in actual vs. planned costs and time.

6. To provide a resource to assist cost center managers and the project management consultant to keep the DPW cip projects on a monitored, predictable time schedule within budgeted targets, and to identify the interactions between all projects in the cip.

7. To aid the Director to determine, through periodic recommendations to the project management consultant, how the cip project list format and content can be upgraded to help improve DPW cost center effectiveness.

8. To aid the Director to determine demonstrated value added by the efforts of the DPW cost centers to the City of Flint.

9. To develop and implement a procedure with the project management consultant for preparing the annual cip project file by cost center, during the budget preparation period, for the next fiscal year, and for the succeeding five years, all within budget constraints.



DPW 5 Year Capital Improvement Book

Features:

- Indexed by project number when complete (example book is simply numbered 1,2,3...)
- Contains Capital Improvement Funding Forms for all projects
- All Fund Forms are stored in WordPerfect and can be easily modified
- Once Fund Forms are complete information is available to create Action Request Letters and other memo
- Existing project information available in previous budget submittals for entry into program

c Stephenson

DEPARTMENT OF PUBLIC WORKS & UTILITIES

Woodrow Stanley
MAYOR

Fred D. Watts, Jr., P.E
DIRECTOR

MEMORANDUM

TO: All DPW Cost Centers

FROM: Fred D. Watts, P.E., Director
Public Works and Utilities

DATE: March 9, 1994

SUBJECT: CIP PROGRAM MANAGEMENT

The change order to the contract with Ralph Stephenson for project management assistance has been executed. The contact person regarding contract matters on this contract is John Weisenberger. However, Ralph Stephenson is to provide, directly to me, regular periodic updates on his tasks, both in writing and in person. I have assigned a resource team, lead by John Weisenberger, to assist Mr. Stephenson with the collection of information on an as needed basis. Other members of the team are Mike Mansfield and Mike Lunn.

Mr. Stephenson has been provided with the latest printout of our 5-year Capital Improvement Program and will need to talk to each of you for clarification about your individual projects and future needs. Also, in the near future, I hope to schedule a group meeting with him to exchange thoughts about the program. It is important that you stress those projects in your program that are the most critical so that he may key in on them.

The major benefit of this service is to keep us on target, time wise and funding wise. As such, he will need continual updates from you on these matters. Be prepared to identify critical time and funding constraints so that he can put them in the process.

Thank you for your cooperation.

Fred D. Watts, P.E., Director
Public Works and Utilities

FDW.mj\director.stephen.ccm

DEPARTMENT OF PUBLIC WORKS & UTILITIES

Woodrow Stanley
MAYOR

Fred D. Watts, Jr., P.E
DIRECTOR

April 1, 1994

Mr. Ralph Stephenson
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858

Dear Mr. Stephenson:

At our meeting last month, we discussed the process for meeting the scope of work for our current needs. The following are some of the key points discussed.

- You are to provide me a short monthly summary report on the progress of your activities.
- You are to meet with me monthly, at a day and time convenient to your schedule.
- You are to meet with each of my cost center managers to assist in the scheduling and monitoring of our 5-year "moving" CIP.
- You are to contact John Weisenberger for any material or coordination you may require.
- I have created a resource team, led by John with Mike Mansfield and Mike Lunn as members. They are to advise me on all matters regarding this contract and you may feel free to meet with them as needed.
- The major object of this service is to keep us on target regarding critical time factor, major cash flow requirements and overall phase coordination.

I have advised my cost center managers of your activity by way of the attached memo and they are ready to respond to your requests.

Please advise me as to the schedule of the one-on-one monthly meetings between you and me.

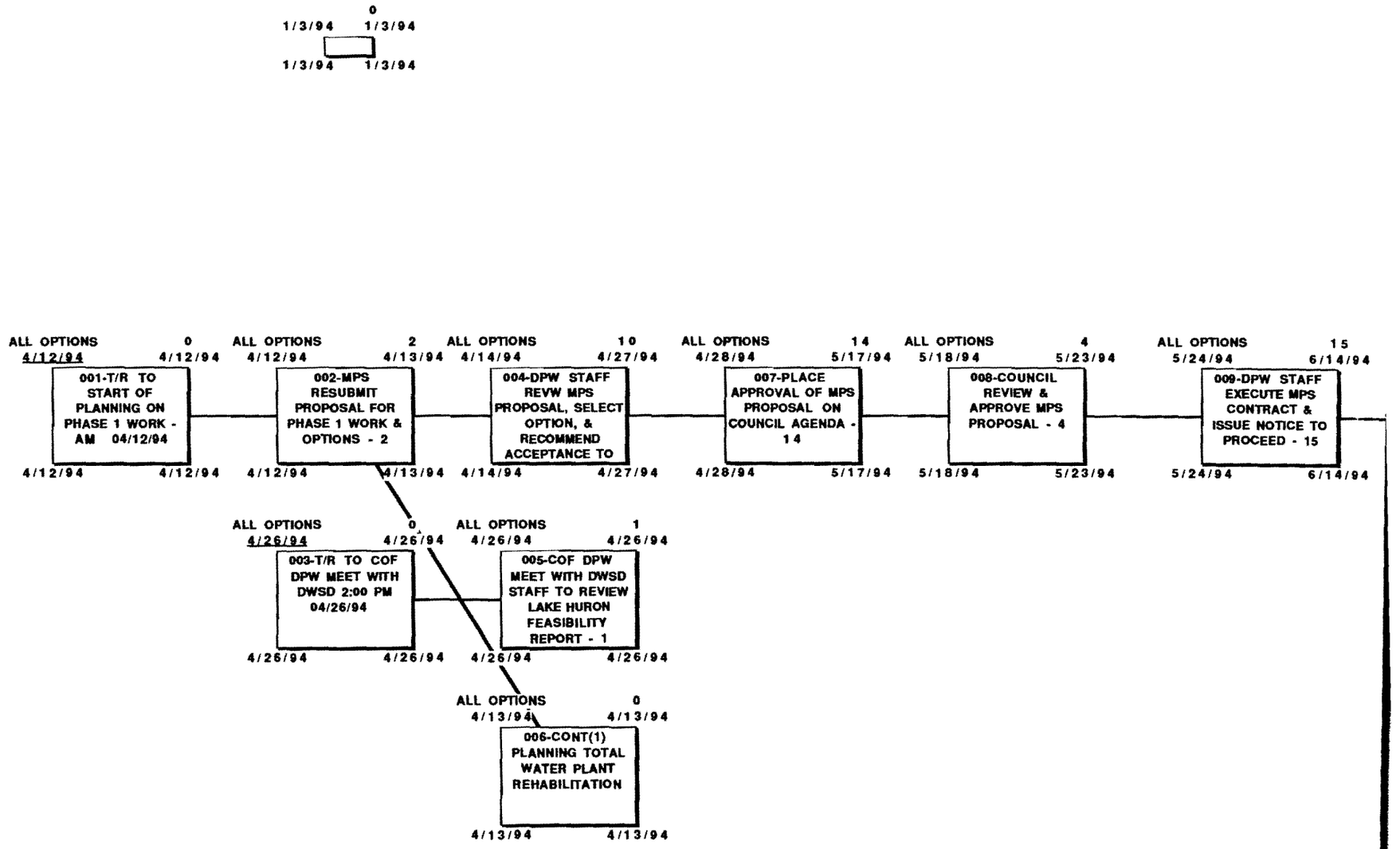
Sincerely,

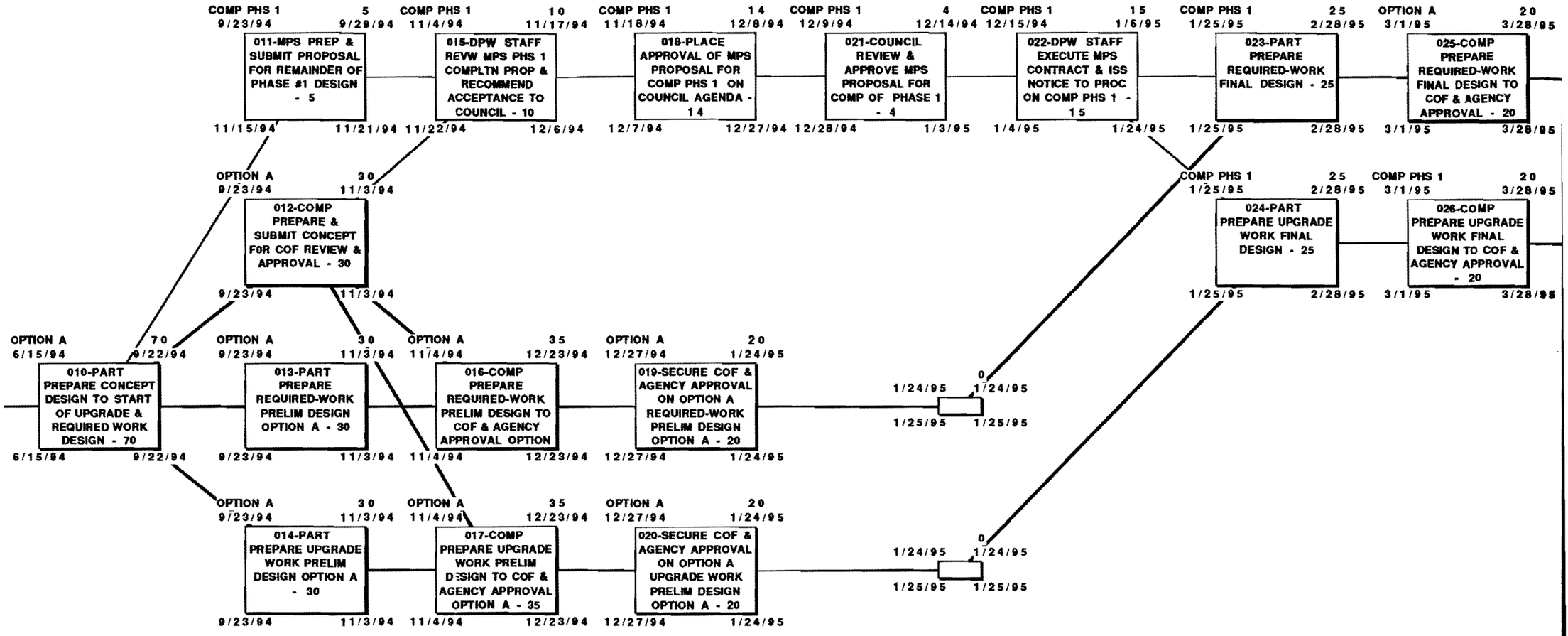
Fred D. Watts, P.E., Director
Department of Public Works and Utilities

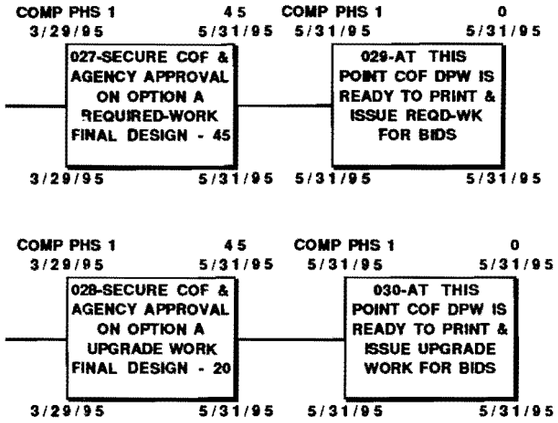
FDW\wtrplant\wkscope.rs

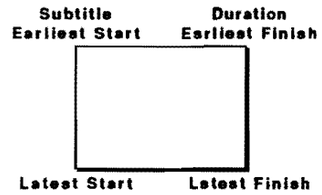
Attachment

cc: John Weisenberger


0
1/3/94 1/3/94
1/3/94 1/3/94
ALL OPTIONS 0
4/12/94 4/12/94
001-T/R TO START OF PLANNING ON PHASE 1 WORK - AM 04/12/94
4/12/94 4/12/94
ALL OPTIONS 2
4/12/94 4/13/94
002-MPS RESUBMIT PROPOSAL FOR PHASE 1 WORK & OPTIONS - 2
4/12/94 4/13/94
ALL OPTIONS 10
4/14/94 4/27/94
004-DPW STAFF REVW MPS PROPOSAL, SELECT OPTION, & RECOMMEND ACCEPTANCE TO
4/14/94 4/27/94
ALL OPTIONS 14
4/28/94 5/17/94
007-PLACE APPROVAL OF MPS PROPOSAL ON COUNCIL AGENDA - 14
4/28/94 5/17/94
ALL OPTIONS 4
5/18/94 5/23/94
008-COUNCIL REVIEW & APPROVE MPS PROPOSAL - 4
5/18/94 5/23/94
ALL OPTIONS 15
5/24/94 6/14/94
009-DPW STAFF EXECUTE MPS CONTRACT & ISSUE NOTICE TO PROCEED - 15
5/24/94 6/14/94
ALL OPTIONS 0
4/26/94 4/26/94
003-T/R TO COF DPW MEET WITH DWSD 2:00 PM 04/26/94
4/26/94 4/26/94
ALL OPTIONS 1
4/26/94 4/26/94
005-COF DPW MEET WITH DWSD STAFF TO REVIEW LAKE HURON FEASIBILITY REPORT - 1
4/26/94 4/26/94
ALL OPTIONS 0
4/13/94 4/13/94
006-CONT(1) PLANNING TOTAL WATER PLANT REHABILITATION
4/13/94 4/13/94


COMP PHS 1 5
9/23/94 9/29/94
011-MPS PREP & SUBMIT PROPOSAL FOR REMAINDER OF PHASE #1 DESIGN - 5
11/15/94 11/21/94
COMP PHS 1 10
11/4/94 11/17/94
015-DPW STAFF REVW MPS PHS 1 COMPLTN PROP & RECOMMEND ACCEPTANCE TO COUNCIL - 10
11/22/94 12/6/94
COMP PHS 1 14
11/18/94 12/8/94
018-PLACE APPROVAL OF MPS PROPOSAL FOR COMP PHS 1 ON COUNCIL AGENDA - 14
12/7/94 12/27/94
COMP PHS 1 4
12/9/94 12/14/94
021-COUNCIL REVIEW & APPROVE MPS PROPOSAL FOR COMP OF PHASE 1 - 4
12/28/94 1/3/95
COMP PHS 1 15
12/15/94 1/6/95
022-DPW STAFF EXECUTE MPS CONTRACT & ISS NOTICE TO PROC ON COMP PHS 1 - 15
1/4/95 1/24/95
COMP PHS 1 25
1/25/95 2/28/95
023-PART PREPARE REQUIRED-WORK FINAL DESIGN - 25
1/25/95 2/28/95
OPTION A 20
3/1/95 3/28/95
025-COMP PREPARE REQUIRED-WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
3/1/95 3/28/95
OPTION A 30
9/23/94 11/3/94
012-COMP PREPARE & SUBMIT CONCEPT FOR COF REVIEW & APPROVAL - 30
9/23/94 11/3/94
COMP PHS 1 25
1/25/95 2/28/95
024-PART PREPARE UPGRADE WORK FINAL DESIGN - 25
1/25/95 2/28/95
COMP PHS 1 20
3/1/95 3/28/95
026-COMP PREPARE UPGRADE WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
3/1/95 3/28/95
OPTION A 70
6/15/94 9/22/94
010-PART PREPARE CONCEPT DESIGN TO START OF UPGRADE & REQUIRED WORK DESIGN - 70
6/15/94 9/22/94
OPTION A 30
9/23/94 11/3/94
013-PART PREPARE REQUIRED-WORK PRELIM DESIGN OPTION A - 30
9/23/94 11/3/94
OPTION A 35
11/4/94 12/23/94
016-COMP PREPARE REQUIRED-WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION
11/4/94 12/23/94
OPTION A 20
12/27/94 1/24/95
019-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK PRELIM DESIGN OPTION A - 20
12/27/94 1/24/95
0
1/24/95 1/24/95
1/25/95 1/25/95
OPTION A 30
9/23/94 11/3/94
014-PART PREPARE UPGRADE WORK PRELIM DESIGN OPTION A - 30
9/23/94 11/3/94
OPTION A 35
11/4/94 12/23/94
017-COMP PREPARE UPGRADE WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION A - 35
11/4/94 12/23/94
OPTION A 20
12/27/94 1/24/95
020-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK PRELIM DESIGN OPTION A - 20
12/27/94 1/24/95
0
1/24/95 1/24/95
1/25/95 1/25/95





Activity Legend

NETWORK MODEL FOR CITY OF FLINT WATER PLANT REHABILITATION

Flint, Michigan

Reserved activity numbers

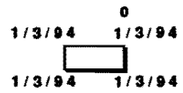
041 046
042 047
043 048
044 049
045 050

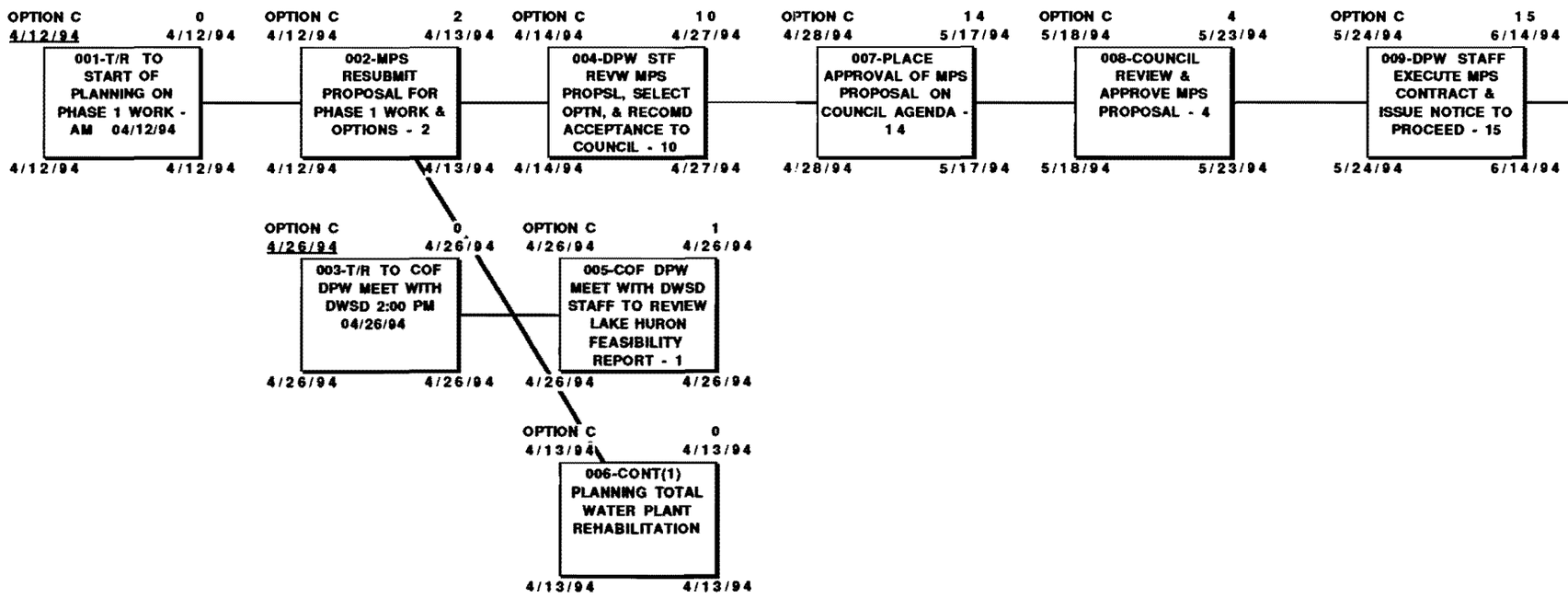
Issue #1 - April 12, 1994
i1 sht #1 - d394

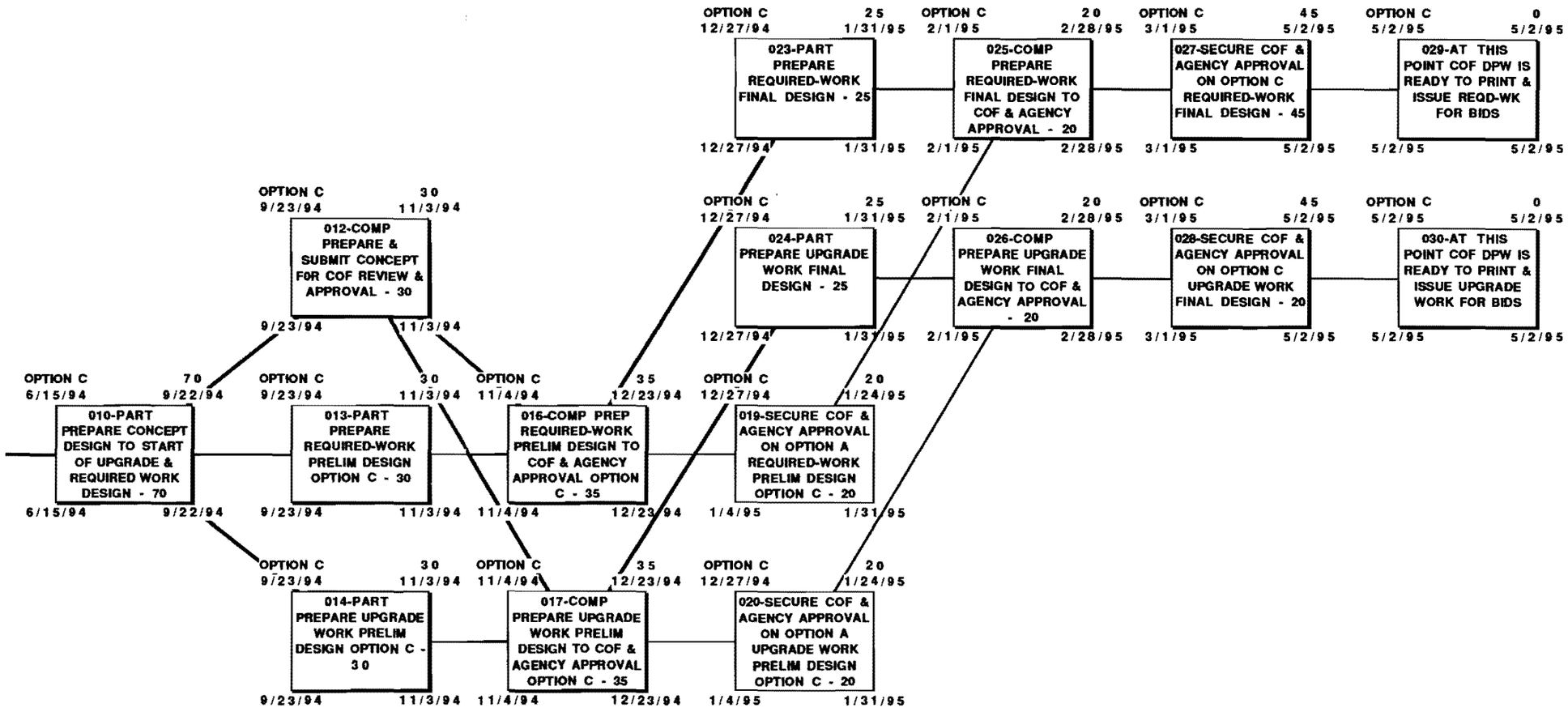
Fred Watts, Jr., P. E. - Director
John W. Weisenberger - Water Plant Supervisor

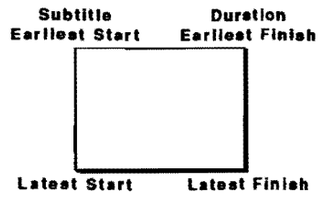
Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537

sheet #1


0
1/3/94 1/3/94
1/3/94 1/3/94


OPTION C 0
4/12/94 4/12/94
001-T/R TO START OF PLANNING ON PHASE 1 WORK - AM 04/12/94
4/12/94 4/12/94
OPTION C 2
4/12/94 4/13/94
002-MPS RESUBMIT PROPOSAL FOR PHASE 1 WORK & OPTIONS - 2
4/12/94 4/13/94
OPTION C 10
4/14/94 4/27/94
004-DPW STF REVW MPS PROPSL, SELECT OPTN, & RECOMD ACCEPTANCE TO COUNCIL - 10
4/14/94 4/27/94
OPTION C 14
4/28/94 5/17/94
007-PLACE APPROVAL OF MPS PROPOSAL ON COUNCIL AGENDA - 14
4/28/94 5/17/94
OPTION C 4
5/18/94 5/23/94
008-COUNCIL REVIEW & APPROVE MPS PROPOSAL - 4
5/18/94 5/23/94
OPTION C 15
5/24/94 6/14/94
009-DPW STAFF EXECUTE MPS CONTRACT & ISSUE NOTICE TO PROCEED - 15
5/24/94 6/14/94
OPTION C 0
4/26/94 4/26/94
003-T/R TO COF DPW MEET WITH DWSD 2:00 PM 04/26/94
4/26/94 4/26/94
OPTION C 1
4/26/94 4/26/94
005-COF DPW MEET WITH DWSD STAFF TO REVIEW LAKE HURON FEASIBILITY REPORT - 1
4/26/94 4/26/94
OPTION C 0
4/13/94 4/13/94
006-CONT(1) PLANNING TOTAL WATER PLANT REHABILITATION
4/13/94 4/13/94


OPTION C 70
6/15/94 9/22/94
010-PART PREPARE CONCEPT DESIGN TO START OF UPGRADE & REQUIRED WORK DESIGN - 70
6/15/94 9/22/94
OPTION C 30
9/23/94 11/3/94
012-COMP PREPARE & SUBMIT CONCEPT FOR COF REVIEW & APPROVAL - 30
9/23/94 11/3/94
OPTION C 30
9/23/94 11/3/94
013-PART PREPARE REQUIRED-WORK PRELIM DESIGN OPTION C - 30
9/23/94 11/3/94
OPTION C 30
9/23/94 11/3/94
014-PART PREPARE UPGRADE WORK PRELIM DESIGN OPTION C - 30
9/23/94 11/3/94
OPTION C 35
11/4/94 12/23/94
016-COMP PREP REQUIRED-WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION C - 35
11/4/94 12/23/94
OPTION C 35
11/4/94 12/23/94
017-COMP PREPARE UPGRADE WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION C - 35
11/4/94 12/23/94
OPTION C 25
12/27/94 1/31/95
023-PART PREPARE REQUIRED-WORK FINAL DESIGN - 25
12/27/94 1/31/95
OPTION C 25
12/27/94 1/31/95
024-PART PREPARE UPGRADE WORK FINAL DESIGN - 25
12/27/94 1/31/95
OPTION C 20
12/27/94 1/24/95
019-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK PRELIM DESIGN OPTION C - 20
1/4/95 1/31/95
OPTION C 20
12/27/94 1/24/95
020-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK PRELIM DESIGN OPTION C - 20
1/4/95 1/31/95
OPTION C 20
2/1/95 2/28/95
025-COMP PREPARE REQUIRED-WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
2/1/95 2/28/95
OPTION C 20
2/1/95 2/28/95
026-COMP PREPARE UPGRADE WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
2/1/95 2/28/95
OPTION C 45
3/1/95 5/2/95
027-SECURE COF & AGENCY APPROVAL ON OPTION C REQUIRED-WORK FINAL DESIGN - 45
3/1/95 5/2/95
OPTION C 45
3/1/95 5/2/95
028-SECURE COF & AGENCY APPROVAL ON OPTION C UPGRADE WORK FINAL DESIGN - 20
3/1/95 5/2/95
OPTION C 0
5/2/95 5/2/95
029-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE REQD-WK FOR BIDS
5/2/95 5/2/95
OPTION C 0
5/2/95 5/2/95
030-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE UPGRADE WORK FOR BIDS
5/2/95 5/2/95



Activity Legend

OPTION C - PHASE 1

NETWORK MODEL FOR CITY OF FLINT WATER PLANT REHABILITATION

Flint, Michigan

Issue #1 - April 12, 1994
il sht #2 - d394

Fred Watts, Jr., P. E. - Directc
John W. Weisenberger - Water Plant Supervisor

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537

Reserved activity numbers

041	046
042	047
043	048
044	049
045	050

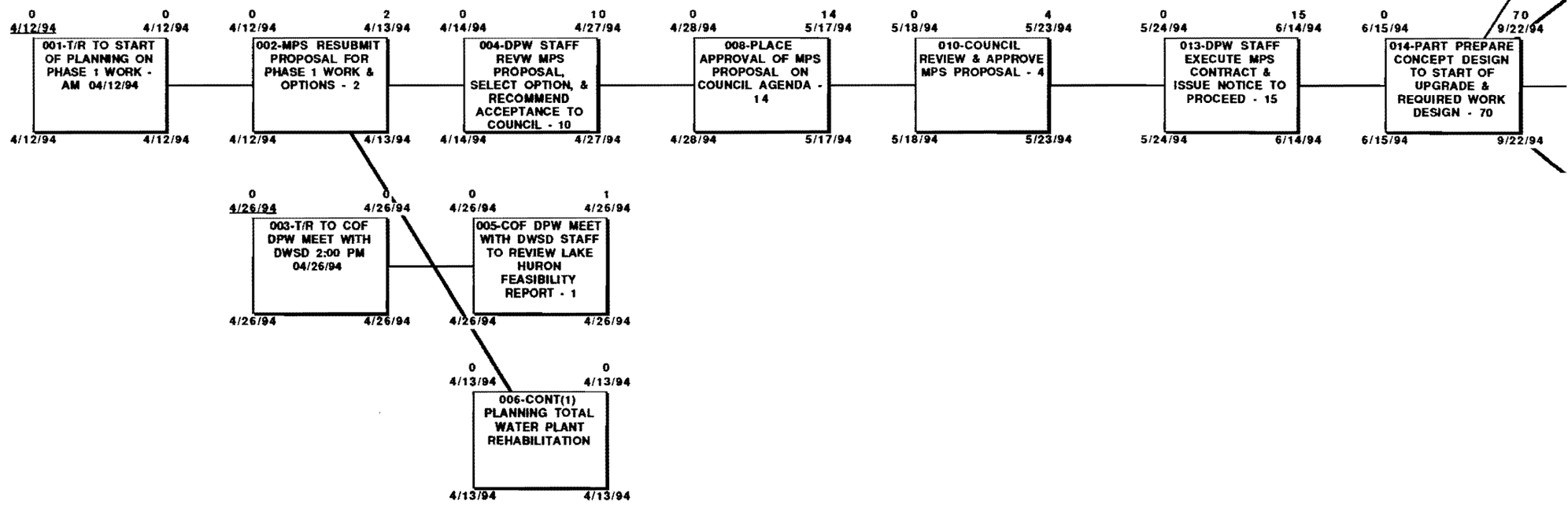
sheet #2

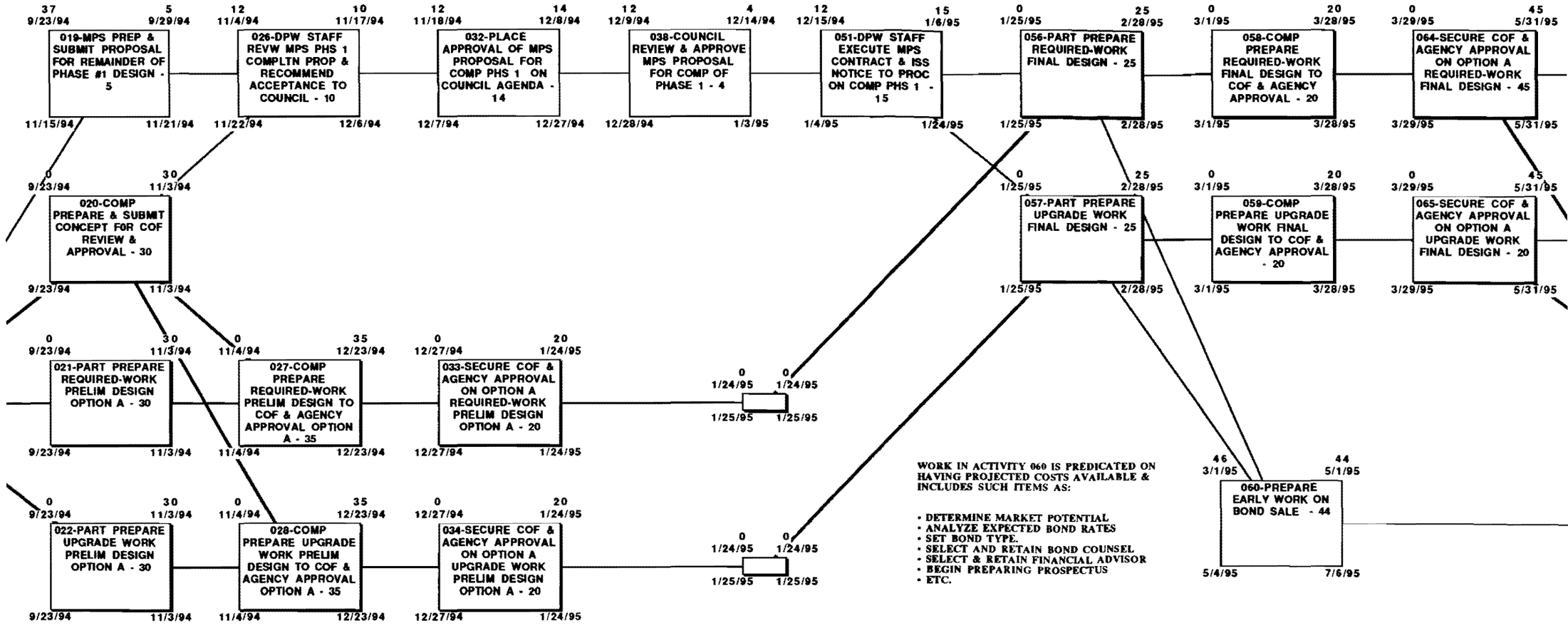
PRELIMINARY - FOR REVIEW
& COMMENT ONLY!

LOGIC FOR THIS PORTION OF THE NETWORK MODEL IS TO BE REVISED TO REFLECT UPDATED CONDITIONS AND PROCEDURES.

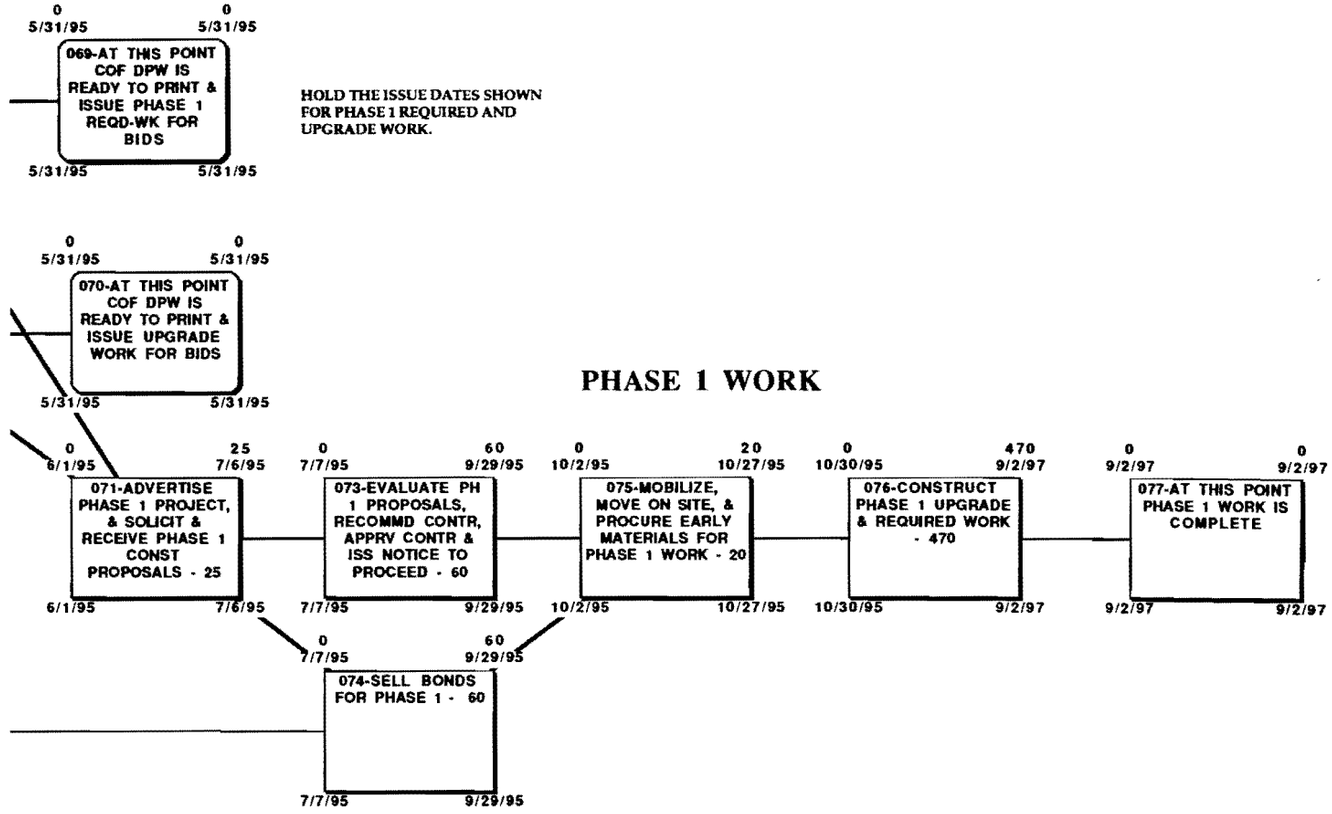
0 0
1/3/94 1/3/94
1/3/94 1/3/94

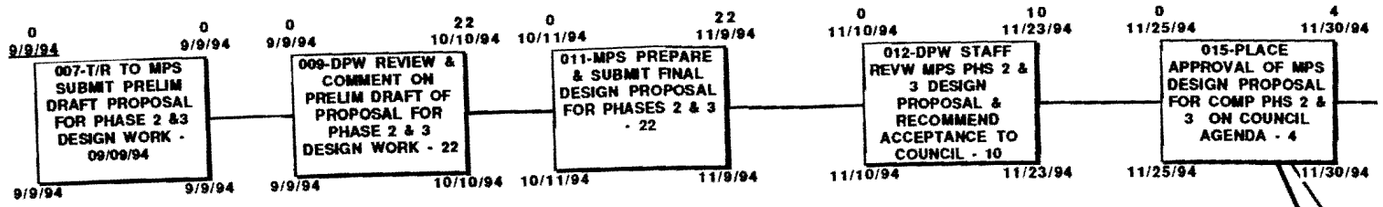
PHASE 1 WORK



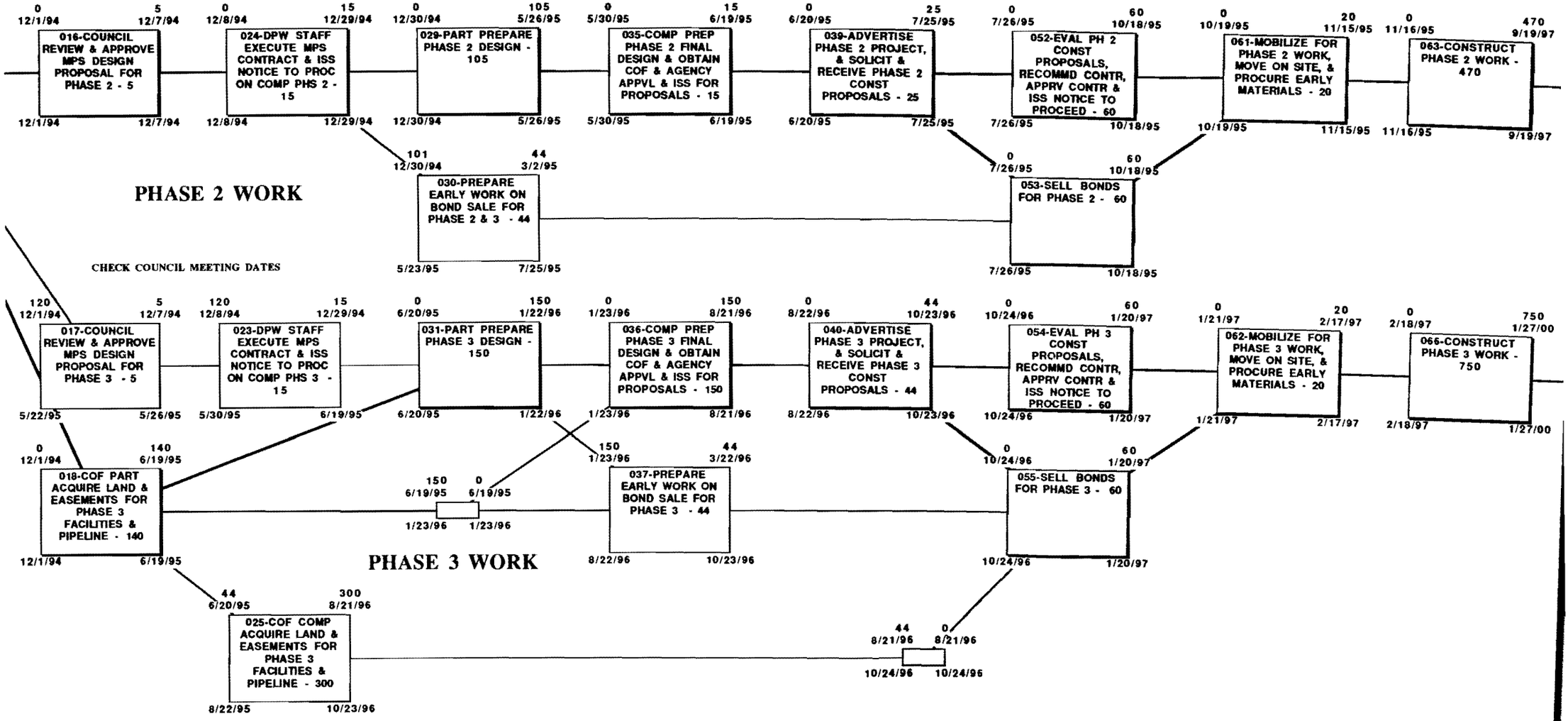

37 9/23/94 5 9/29/94
019-MPS PREP & SUBMIT PROPOSAL FOR REMAINDER OF PHASE #1 DESIGN - 5
11/15/94 11/21/94
12 11/4/94 10 11/17/94
026-DPW STAFF REVW MPS PHS 1 COMPLTN PROP & RECOMMEND ACCEPTANCE TO COUNCIL - 10
11/22/94 12/6/94
12 11/18/94 14 12/8/94
032-PLACE APPROVAL OF MPS PROPOSAL FOR COMP PHS 1 ON COUNCIL AGENDA - 14
12/7/94 12/27/94
12 12/9/94 4 12/14/94
038-COUNCIL REVIEW & APPROVE MPS PROPOSAL FOR COMP OF PHASE 1 - 4
12/28/94 1/3/95
12 12/15/94 15 1/6/95
051-DPW STAFF EXECUTE MPS CONTRACT & ISS NOTICE TO PROC ON COMP PHS 1 - 15
1/4/95 1/24/95
0 1/25/95 25 2/28/95
056-PART PREPARE REQUIRED-WORK FINAL DESIGN - 25
1/25/95 2/28/95
0 3/1/95 20 3/28/95
058-COMP PREPARE REQUIRED-WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
3/1/95 3/28/95
0 3/29/95 45 5/31/95
064-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK FINAL DESIGN - 45
3/29/95 5/31/95
0 9/23/94 30 11/3/94
020-COMP PREPARE & SUBMIT CONCEPT FOR COF REVIEW & APPROVAL - 30
9/23/94 11/3/94
0 1/25/95 25 2/28/95
057-PART PREPARE UPGRADE WORK FINAL DESIGN - 25
1/25/95 2/28/95
0 3/1/95 20 3/28/95
059-COMP PREPARE UPGRADE WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20
3/1/95 3/28/95
0 3/29/95 45 5/31/95
065-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK FINAL DESIGN - 20
3/29/95 5/31/95
0 9/23/94 30 11/3/94
021-PART PREPARE REQUIRED-WORK PRELIM DESIGN OPTION A - 30
9/23/94 11/3/94
0 11/4/94 35 12/23/94
027-COMP PREPARE REQUIRED-WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION A - 35
11/4/94 12/23/94
0 12/27/94 20 1/24/95
033-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK PRELIM DESIGN OPTION A - 20
12/27/94 1/24/95
0 1/24/95 0 1/24/95
1/25/95 1/25/95
0 9/23/94 30 11/3/94
022-PART PREPARE UPGRADE WORK PRELIM DESIGN OPTION A - 30
9/23/94 11/3/94
0 11/4/94 35 12/23/94
028-COMP PREPARE UPGRADE WORK PRELIM DESIGN TO COF & AGENCY APPROVAL OPTION A - 35
11/4/94 12/23/94
0 12/27/94 20 1/24/95
034-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK PRELIM DESIGN OPTION A - 20
12/27/94 1/24/95
0 1/24/95 0 1/24/95
1/25/95 1/25/95
WORK IN ACTIVITY 060 IS PREDICATED ON HAVING PROJECTED COSTS AVAILABLE & INCLUDES SUCH ITEMS AS:
• DETERMINE MARKET POTENTIAL
• ANALYZE EXPECTED BOND RATES
• SET BOND TYPE.
• SELECT AND RETAIN BOND COUNSEL
• SELECT & RETAIN FINANCIAL ADVISOR
• BEGIN PREPARING PROSPECTUS
• ETC.
46 3/1/95 44 5/1/95
060-PREPARE EARLY WORK ON BOND SALE - 44
5/4/95 7/6/95

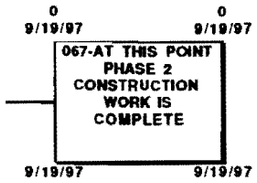
PHASE 1 WORK


0
5/31/95
0
5/31/95
069-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE PHASE 1 REQD-WK FOR BIDS
5/31/95
5/31/95
HOLD THE ISSUE DATES SHOWN FOR PHASE 1 REQUIRED AND UPGRADE WORK.
0
5/31/95
0
5/31/95
070-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE UPGRADE WORK FOR BIDS
5/31/95
5/31/95
0
6/1/95
25
7/6/95
071-ADVERTISE PHASE 1 PROJECT, & SOLICIT & RECEIVE PHASE 1 CONST PROPOSALS - 25
6/1/95
7/6/95
0
7/7/95
60
9/29/95
073-EVALUATE PH 1 PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
7/7/95
9/29/95
0
10/2/95
20
10/27/95
075-MOBILIZE, MOVE ON SITE, & PROCURE EARLY MATERIALS FOR PHASE 1 WORK - 20
10/2/95
10/27/95
0
10/30/95
470
9/2/97
076-CONSTRUCT PHASE 1 UPGRADE & REQUIRED WORK - 470
10/30/95
9/2/97
0
9/2/97
0
9/2/97
077-AT THIS POINT PHASE 1 WORK IS COMPLETE
9/2/97
9/2/97
0
7/7/95
60
9/29/95
074-SELL BONDS FOR PHASE 1 - 60
7/7/95
9/29/95



PHASE 2 & 3 WORK

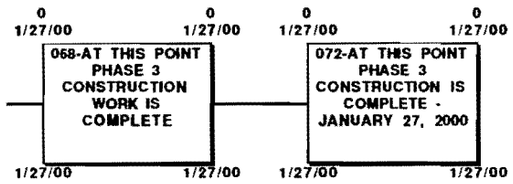

016-COUNCIL REVIEW & APPROVE MPS DESIGN PROPOSAL FOR PHASE 2 - 5
024-DPW STAFF EXECUTE MPS CONTRACT & ISS NOTICE TO PROC ON COMP PHS 2 - 15
029-PART PREPARE PHASE 2 DESIGN - 105
035-COMP PREP PHASE 2 FINAL DESIGN & OBTAIN COF & AGENCY APPVL & ISS FOR PROPOSALS - 15
039-ADVERTISE PHASE 2 PROJECT, & SOLICIT & RECEIVE PHASE 2 CONST PROPOSALS - 25
052-EVAL PH 2 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
061-MOBILIZE FOR PHASE 2 WORK, MOVE ON SITE, & PROCURE EARLY MATERIALS - 20
063-CONSTRUCT PHASE 2 WORK - 470
030-PREPARE EARLY WORK ON BOND SALE FOR PHASE 2 & 3 - 44
053-SELL BONDS FOR PHASE 2 - 60
PHASE 2 WORK
CHECK COUNCIL MEETING DATES
017-COUNCIL REVIEW & APPROVE MPS DESIGN PROPOSAL FOR PHASE 3 - 5
023-DPW STAFF EXECUTE MPS CONTRACT & ISS NOTICE TO PROC ON COMP PHS 3 - 15
031-PART PREPARE PHASE 3 DESIGN - 150
036-COMP PREP PHASE 3 FINAL DESIGN & OBTAIN COF & AGENCY APPVL & ISS FOR PROPOSALS - 150
040-ADVERTISE PHASE 3 PROJECT, & SOLICIT & RECEIVE PHASE 3 CONST PROPOSALS - 44
054-EVAL PH 3 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
062-MOBILIZE FOR PHASE 3 WORK, MOVE ON SITE, & PROCURE EARLY MATERIALS - 20
066-CONSTRUCT PHASE 3 WORK - 750
018-COF PART ACQUIRE LAND & EASEMENTS FOR PHASE 3 FACILITIES & PIPELINE - 140
037-PREPARE EARLY WORK ON BOND SALE FOR PHASE 3 - 44
055-SELL BONDS FOR PHASE 3 - 60
PHASE 3 WORK
025-COF COMP ACQUIRE LAND & EASEMENTS FOR PHASE 3 FACILITIES & PIPELINE - 300



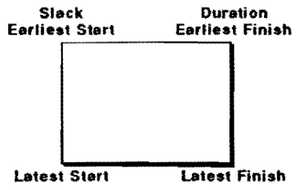
PHASE 2 WORK

PRELIMINARY - FOR REVIEW & COMMENT ONLY!

NOTE: YEAR SHOWN AS 00 IS THE YEAR 2000.



PHASE 3 WORK



Activity Legend

Reserved activity numbers

041	046
042	047
043	048
044	049
045	050

Issue #1 - April 12, 1994
Issue #2 - August 12, 1994
i2 sht #1 smry lp - d394 - 50%

NETWORK MODEL FOR CITY OF FLINT WATER PLANT REHABILITATION

Flint, Michigan

Fred Watts, Jr., P. E. - Director
John W. Weisenberger - Water Plant Supervisor

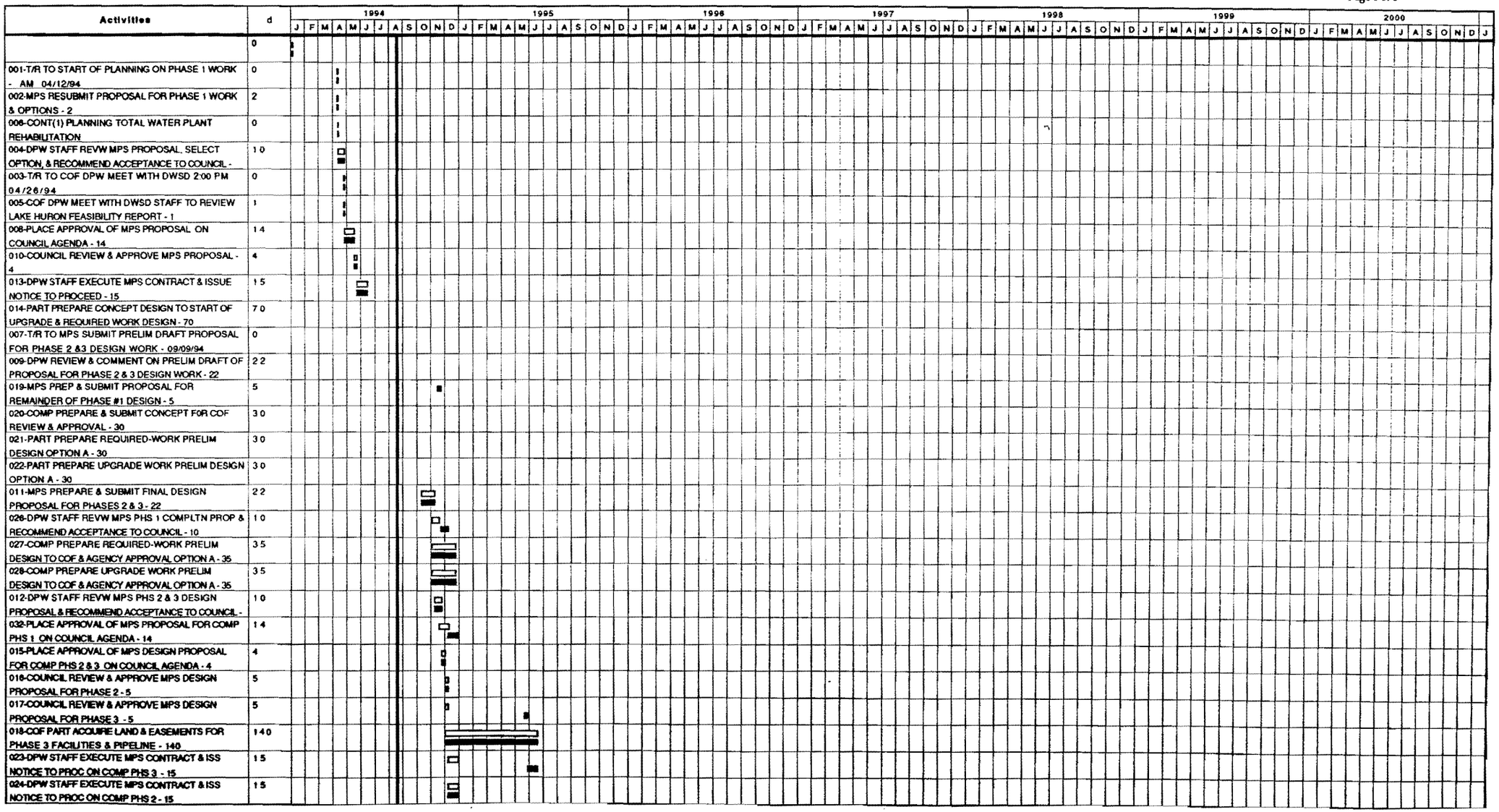
Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537

sheet #1

City of Flint Lake Huron Water Supply

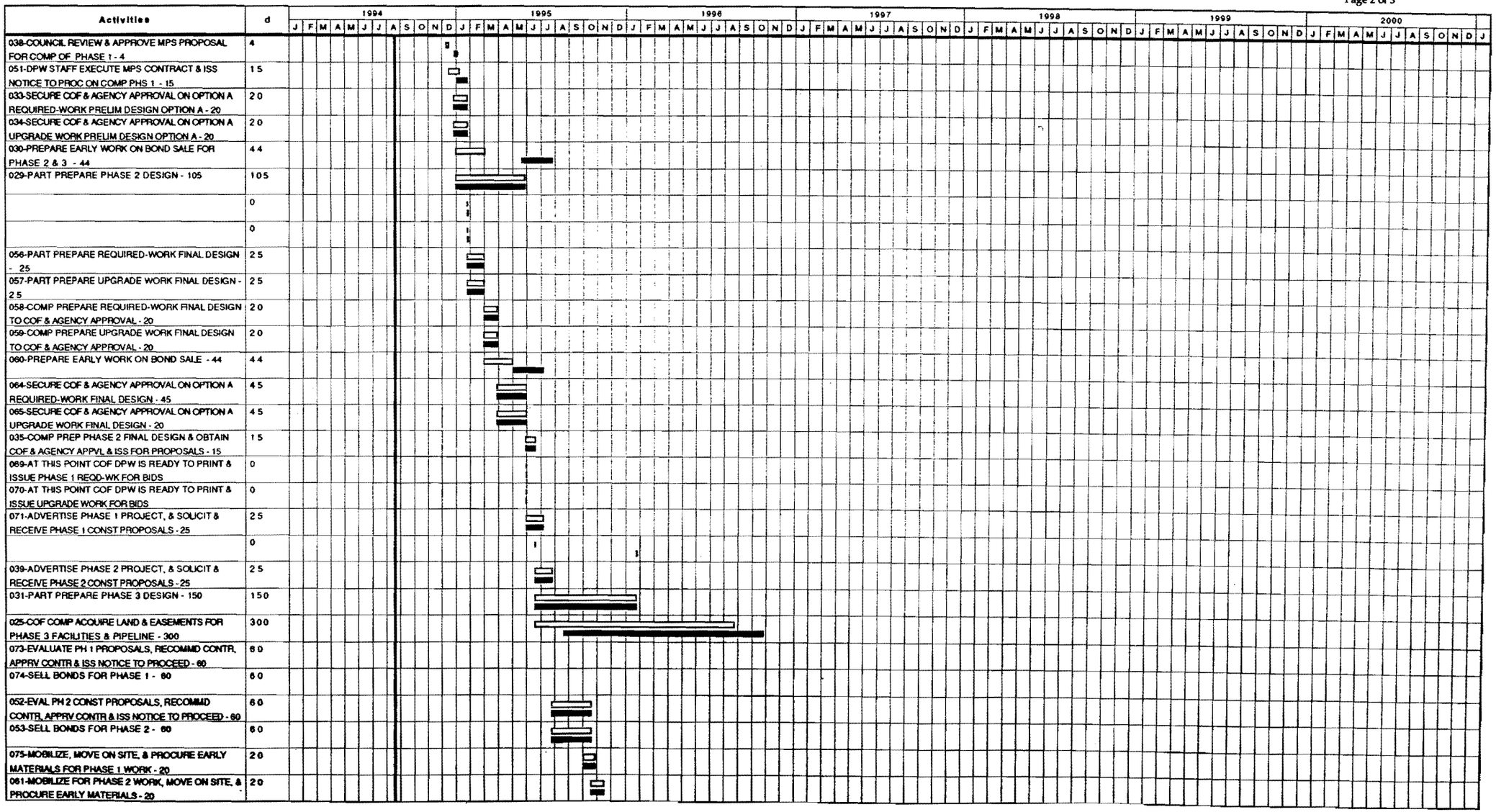
Derived from network model,
sheet #1, issue #2, dated 08/12/94

Friday, August 19, 94



City of Flint Lake Huron Water Supply

Derived from network model,
sheet #1, issue #2, dated 08/12/94

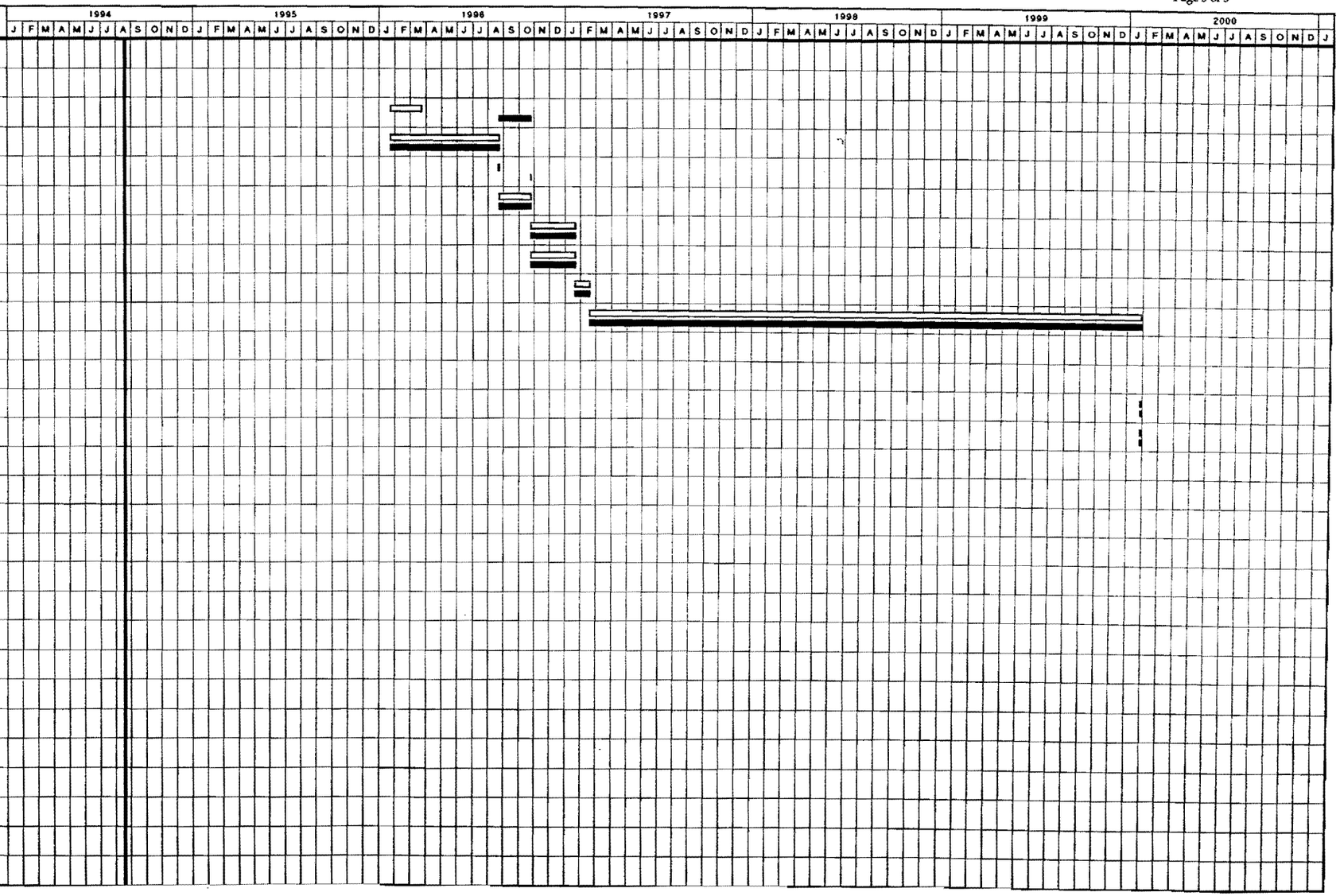


Activities	d
038-COUNCIL REVIEW & APPROVE MPS PROPOSAL FOR COMP OF PHASE 1 - 4	4
051-DPW STAFF EXECUTE MPS CONTRACT & ISS NOTICE TO PROC ON COMP PHS 1 - 15	15
033-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK PRELIM DESIGN OPTION A - 20	20
034-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK PRELIM DESIGN OPTION A - 20	20
030-PREPARE EARLY WORK ON BOND SALE FOR PHASE 2 & 3 - 44	44
029-PART PREPARE PHASE 2 DESIGN - 105	105
	0
	0
056-PART PREPARE REQUIRED-WORK FINAL DESIGN - 25	25
057-PART PREPARE UPGRADE WORK FINAL DESIGN - 25	25
058-COMP PREPARE REQUIRED-WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20	20
059-COMP PREPARE UPGRADE WORK FINAL DESIGN TO COF & AGENCY APPROVAL - 20	20
060-PREPARE EARLY WORK ON BOND SALE - 44	44
064-SECURE COF & AGENCY APPROVAL ON OPTION A REQUIRED-WORK FINAL DESIGN - 45	45
065-SECURE COF & AGENCY APPROVAL ON OPTION A UPGRADE WORK FINAL DESIGN - 20	45
035-COMP PREP PHASE 2 FINAL DESIGN & OBTAIN COF & AGENCY APPVL & ISS FOR PROPOSALS - 15	15
069-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE PHASE 1 REQD-WK FOR BIDS	0
070-AT THIS POINT COF DPW IS READY TO PRINT & ISSUE UPGRADE WORK FOR BIDS	0
071-ADVERTISE PHASE 1 PROJECT, & SOLICIT & RECEIVE PHASE 1 CONST PROPOSALS - 25	25
	0
039-ADVERTISE PHASE 2 PROJECT, & SOLICIT & RECEIVE PHASE 2 CONST PROPOSALS - 25	25
031-PART PREPARE PHASE 3 DESIGN - 150	150
025-COF COMP ACQUIRE LAND & EASEMENTS FOR PHASE 3 FACILITIES & PIPELINE - 300	300
073-EVALUATE PH 1 PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60	60
074-SELL BONDS FOR PHASE 1 - 60	60
052-EVAL PH 2 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60	60
053-SELL BONDS FOR PHASE 2 - 60	60
075-MOBILIZE, MOVE ON SITE, & PROCURE EARLY MATERIALS FOR PHASE 1 WORK - 20	20
061-MOBILIZE FOR PHASE 2 WORK, MOVE ON SITE, & PROCURE EARLY MATERIALS - 20	20

City of Flint Lake Huron Water Supply

Derived from network model,
sheet #1, issue #2, dated 08/12/94

Activities	d
076-CONSTRUCT PHASE 1 UPGRADE & REQUIRED WORK - 470	470
063-CONSTRUCT PHASE 2 WORK - 470	470
037-PREPARE EARLY WORK ON BOND SALE FOR PHASE 3 - 44	44
036-COMP PREP PHASE 3 FINAL DESIGN & OBTAIN COF & AGENCY APPVL & ISS FOR PROPOSALS - 150	150
	0
040-ADVERTISE PHASE 3 PROJECT, & SOLICIT & RECEIVE PHASE 3 CONST PROPOSALS - 44	44
054-EVAL PH 3 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60	60
055-SELL BONDS FOR PHASE 3 - 60	60
062-MOBILIZE FOR PHASE 3 WORK, MOVE ON SITE, & PROCURE EARLY MATERIALS - 20	20
066-CONSTRUCT PHASE 3 WORK - 750	750
077-AT THIS POINT PHASE 1 WORK IS COMPLETE	0
067-AT THIS POINT PHASE 2 CONSTRUCTION WORK IS COMPLETE	0
068-AT THIS POINT PHASE 3 CONSTRUCTION WORK IS COMPLETE	0
072-AT THIS POINT PHASE 3 CONSTRUCTION IS COMPLETE - JANUARY 27, 2000	0

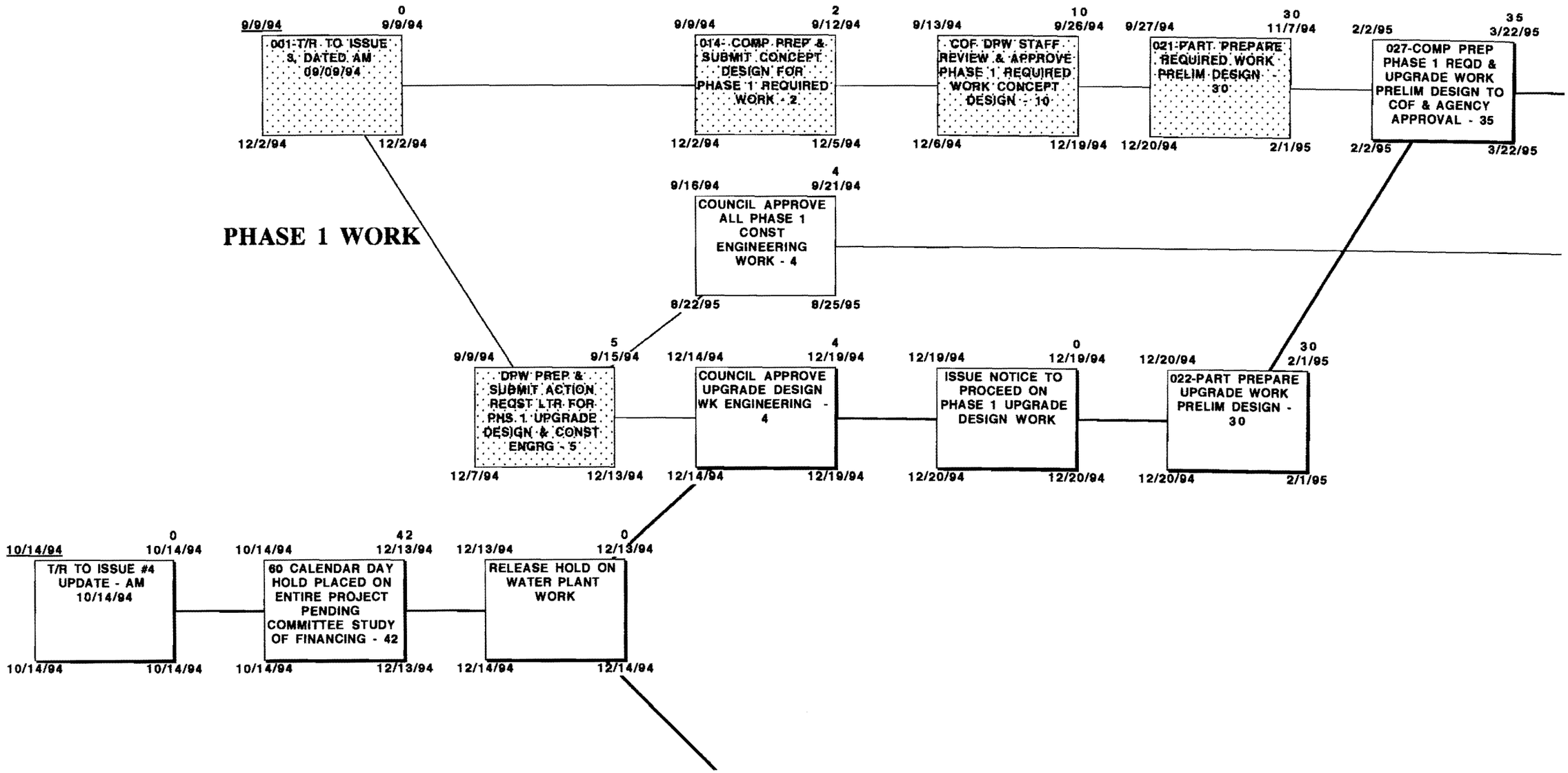


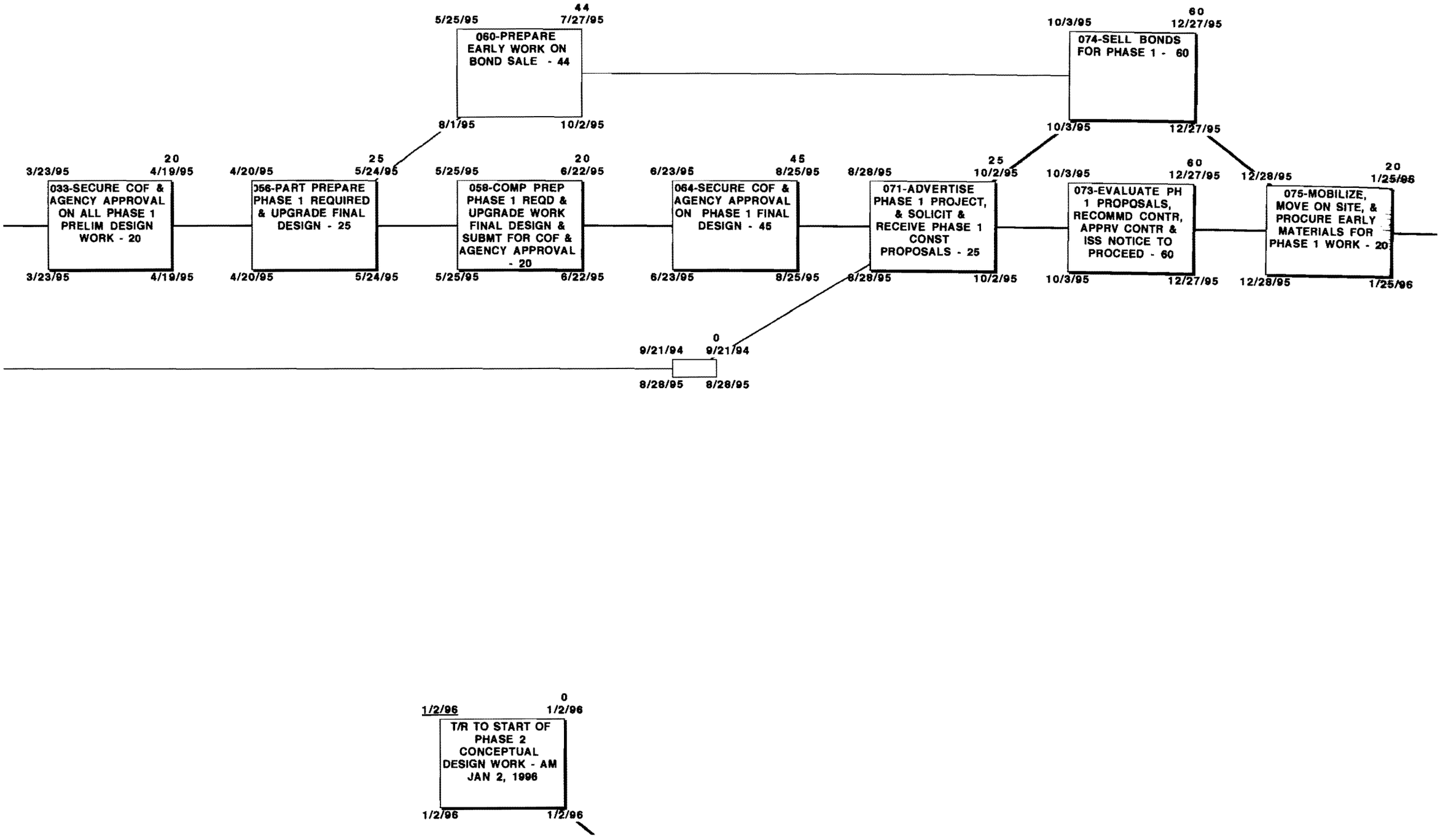
d

PRELIMINARY - FOR REVIEW
& COMMENT ONLY!

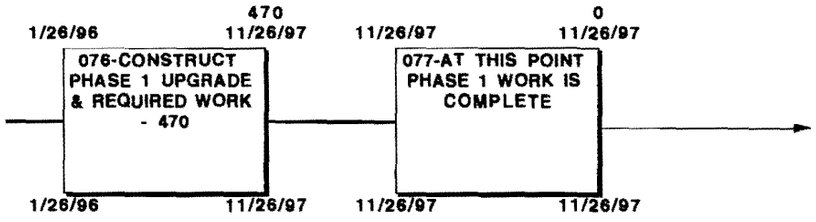
WORK IN ACTIVITY 060 IS PREDICATED ON HAVING PROJECTED COSTS AVAILABLE & INCLUDES SUCH ITEMS AS:

- DETERMINE MARKET POTENTIAL
- ANALYZE EXPECTED BOND RATES
- SET BOND TYPE.
- SELECT AND RETAIN BOND COUNSEL
- SELECT & RETAIN FINANCIAL ADVISOR
- BEGIN PREPARING PROSPECTUS
- ETC.



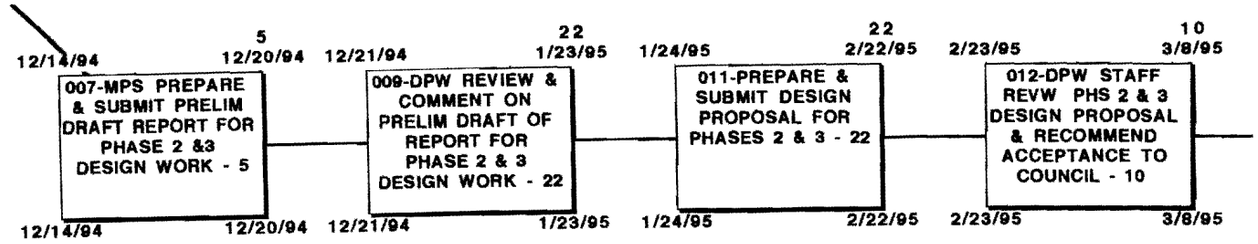

033-SECURE COF & AGENCY APPROVAL ON ALL PHASE 1 PRELIM DESIGN WORK - 20
3/23/95
20
4/19/95
3/23/95
4/19/95
056-PART PREPARE PHASE 1 REQUIRED & UPGRADE FINAL DESIGN - 25
4/20/95
25
5/24/95
4/20/95
5/24/95
058-COMP PREP PHASE 1 REQD & UPGRADE WORK FINAL DESIGN & SUBMT FOR COF & AGENCY APPROVAL - 20
5/25/95
20
6/22/95
5/25/95
6/22/95
060-PREPARE EARLY WORK ON BOND SALE - 44
5/25/95
44
7/27/95
8/1/95
10/2/95
064-SECURE COF & AGENCY APPROVAL ON PHASE 1 FINAL DESIGN - 45
6/23/95
45
8/25/95
6/23/95
8/25/95
071-ADVERTISE PHASE 1 PROJECT, & SOLICIT & RECEIVE PHASE 1 CONST PROPOSALS - 25
8/28/95
25
10/2/95
8/28/95
10/2/95
073-EVALUATE PH 1 PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
10/3/95
60
12/27/95
10/3/95
12/27/95
074-SELL BONDS FOR PHASE 1 - 60
10/3/95
60
12/27/95
10/3/95
12/27/95
075-MOBILIZE, MOVE ON SITE, & PROCURE EARLY MATERIALS FOR PHASE 1 WORK - 20
12/28/95
20
1/25/96
12/28/95
1/25/96
9/21/94
0
9/21/94
8/28/95
8/28/95
T/R TO START OF PHASE 2 CONCEPTUAL DESIGN WORK - AM JAN 2, 1996
1/2/96
0
1/2/96
1/2/96
1/2/96

PHASE 1 WORK

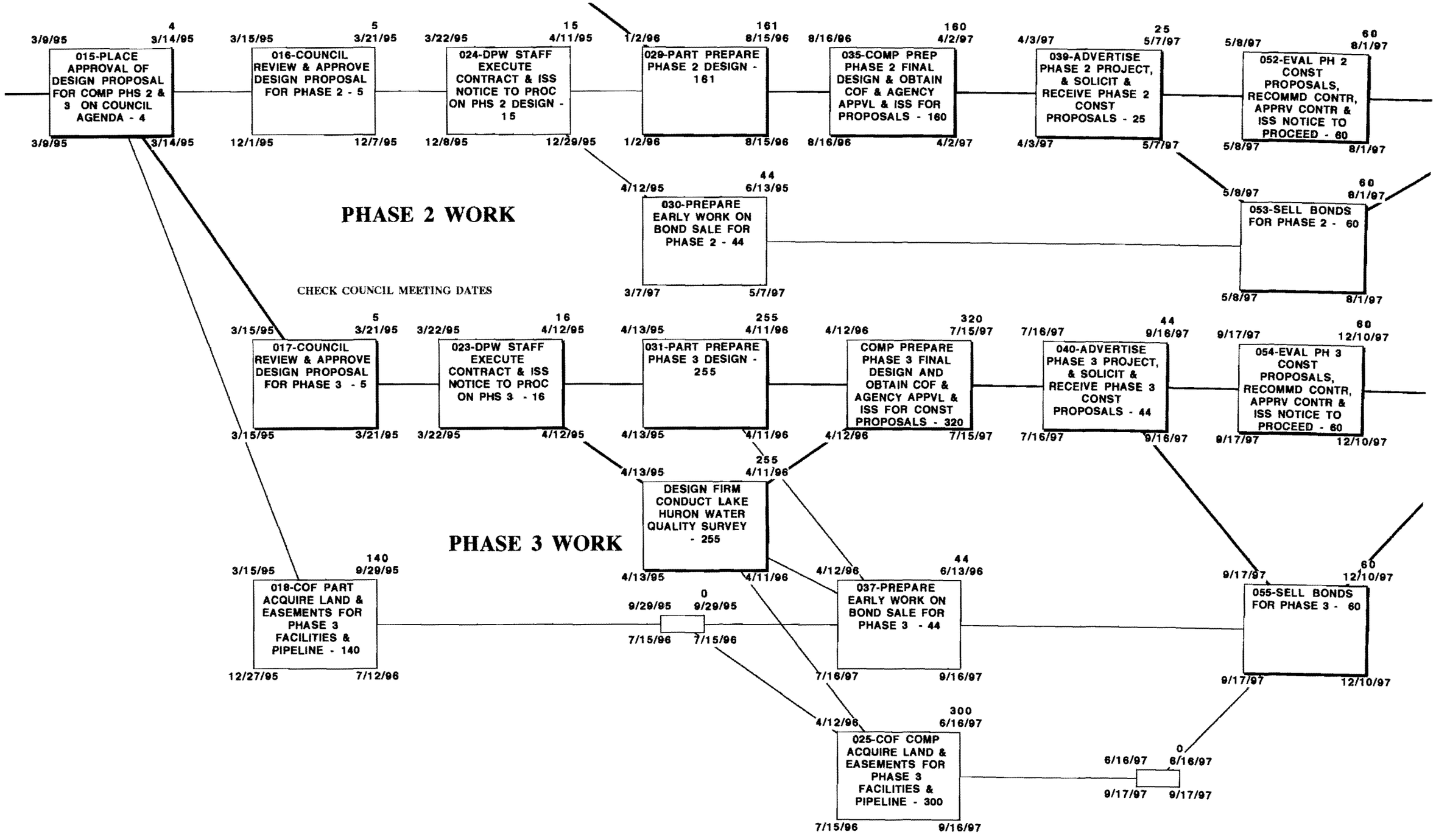


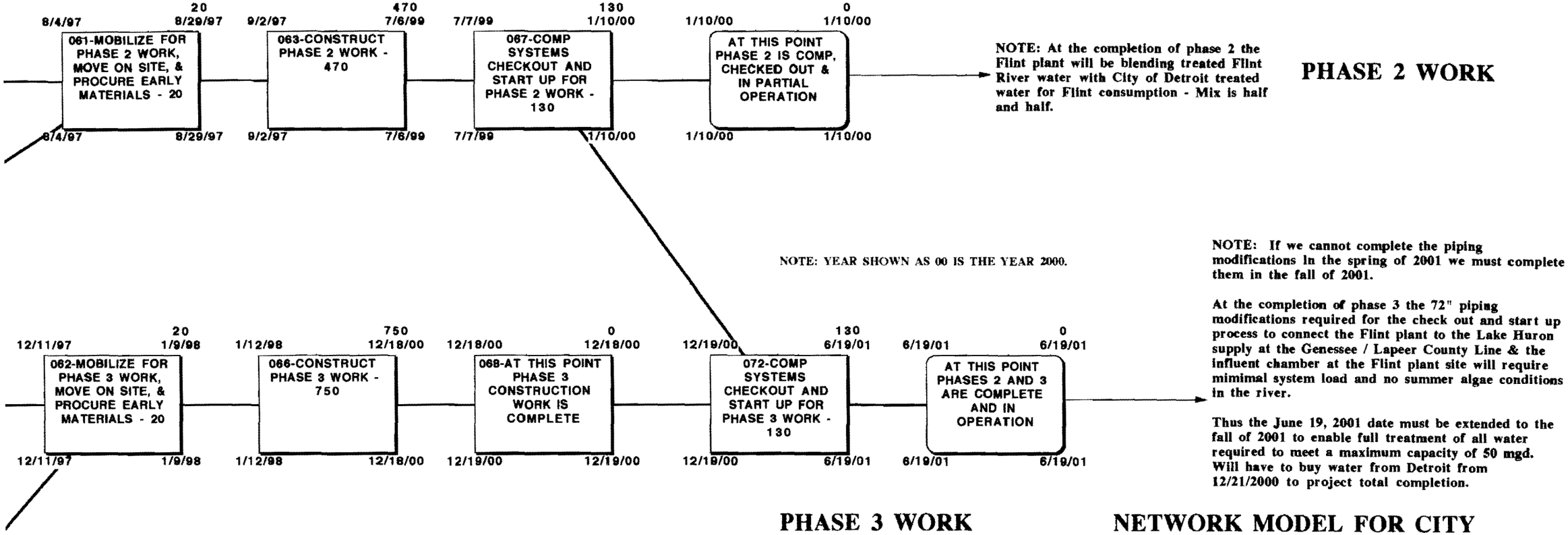
Note: At this point the Flint plant is on line treating Flint River water and being blended with Detroit treated water. This allows Flint to recover approximately $350 per million gallons on about 10 MGD.

For the hold delay of 60 calendar days, the total of this saving would be about $210,000.



PHASE 2 & 3 WORK


PHASE 2 WORK
PHASE 3 WORK
CHECK COUNCIL MEETING DATES
015-PLACE APPROVAL OF DESIGN PROPOSAL FOR COMP PHS 2 & 3 ON COUNCIL AGENDA - 4
3/9/95 4 3/14/95
3/9/95 3/14/95
016-COUNCIL REVIEW & APPROVE DESIGN PROPOSAL FOR PHASE 2 - 5
3/15/95 5 3/21/95
12/1/95 12/7/95
024-DPW STAFF EXECUTE CONTRACT & ISS NOTICE TO PROC ON PHS 2 DESIGN - 15
3/22/95 15 4/11/95
12/8/95 12/29/95
029-PART PREPARE PHASE 2 DESIGN - 161
1/2/96 161 8/15/96
1/2/96 8/15/96
035-COMP PREP PHASE 2 FINAL DESIGN & OBTAIN COF & AGENCY APPVL & ISS FOR PROPOSALS - 160
8/16/96 160 4/2/97
8/16/96 4/2/97
039-ADVERTISE PHASE 2 PROJECT, & SOLICIT & RECEIVE PHASE 2 CONST PROPOSALS - 25
4/3/97 25 5/7/97
4/3/97 5/7/97
052-EVAL PH 2 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
5/8/97 60 8/1/97
5/8/97 8/1/97
030-PREPARE EARLY WORK ON BOND SALE FOR PHASE 2 - 44
4/12/95 44 6/13/95
3/7/97 5/7/97
053-SELL BONDS FOR PHASE 2 - 60
5/8/97 60 8/1/97
5/8/97 8/1/97
017-COUNCIL REVIEW & APPROVE DESIGN PROPOSAL FOR PHASE 3 - 5
3/15/95 5 3/21/95
3/15/95 3/21/95
023-DPW STAFF EXECUTE CONTRACT & ISS NOTICE TO PROC ON PHS 3 - 16
3/22/95 16 4/12/95
3/22/95 4/12/95
031-PART PREPARE PHASE 3 DESIGN - 255
4/13/95 255 4/11/96
4/13/95 4/11/96
COMP PREPARE PHASE 3 FINAL DESIGN AND OBTAIN COF & AGENCY APPVL & ISS FOR CONST PROPOSALS - 320
4/12/96 320 7/15/97
4/12/96 7/15/97
040-ADVERTISE PHASE 3 PROJECT, & SOLICIT & RECEIVE PHASE 3 CONST PROPOSALS - 44
7/16/97 44 9/16/97
7/16/97 9/16/97
054-EVAL PH 3 CONST PROPOSALS, RECOMMD CONTR, APPRV CONTR & ISS NOTICE TO PROCEED - 60
9/17/97 60 12/10/97
9/17/97 12/10/97
DESIGN FIRM CONDUCT LAKE HURON WATER QUALITY SURVEY - 255
4/13/95 255 4/11/96
4/13/95 4/11/96
018-COF PART ACQUIRE LAND & EASEMENTS FOR PHASE 3 FACILITIES & PIPELINE - 140
3/15/95 140 9/29/95
12/27/95 7/12/96
0
9/29/95 9/29/95
7/15/96 7/15/96
037-PREPARE EARLY WORK ON BOND SALE FOR PHASE 3 - 44
4/12/96 44 6/13/96
7/16/97 9/16/97
055-SELL BONDS FOR PHASE 3 - 60
9/17/97 60 12/10/97
9/17/97 12/10/97
025-COF COMP ACQUIRE LAND & EASEMENTS FOR PHASE 3 FACILITIES & PIPELINE - 300
4/12/96 300 6/16/97
7/15/96 9/16/97
0
6/16/97 6/16/97
9/17/97 9/17/97

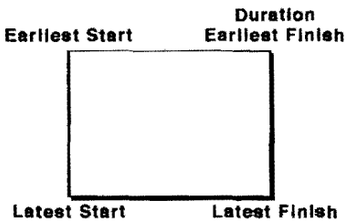


NETWORK MODEL FOR CITY OF FLINT WATER PLANT REHABILITATION

Flint, Michigan

Fred Watts, Jr., P. E. - Director
John W. Weisenberger - Water Plant Supervisor

Ralph J. Stephenson, P. E., P. C.
Consulting Engineer
323 Hiawatha Drive
Mt. Pleasant, Michigan 48858
ph 517 772 2537



Activity Legend

Reserved activity numbers

041	046
042	047
043	048
044	049
045	050

Issue #1 - April 12, 1994
Issue #2 - August 12, 1994
Issue #3 - September 9, 1994
Issue #4 - October 14, 1994
i4 sht #1 smry sw - d394 - 60%