How Monroe County Used NetPoint to Manage an Aggressive Five-Year CIP

Monroe County CIP Resource Allocation

MONROE COUNTY - KEVIN WILSON PE
JAIME E. SOBRINO PMP, LEED AP, AIA
Kevin Wilson PE
Assistant County Administrator - Monroe County

- Professional Engineer licensed in Florida and Ohio
- Bachelor of Science - Chemical Engineering, Carnegie-Melon University
- Senior Engineer Manager for Monroe County
- Responsible for Public Works and Engineering for Monroe County, FL (the Florida Keys).
- Supervises planning and execution of County capital construction, and maintenance of facilities including roads, bridges, buildings and parks. Also manages County wide fleet services, solid waste services, and animal control services.
- Manages Public Works & Engineering budgets of $36 million in operating expenses and over $70 million in capital construction for FY16.

Jaime E. Sobrino PMP, LEED AP, AIA
Director - PMA Consultants, Miami Office

- Bachelor in Architecture - Cornell University School of Architecture, Art & Planning in Ithaca, NY
- Licensed Architect in Florida and Puerto Rico
- LEED AP
- Certified Project Management Professional (PMP)
- 20 years of experience as Architect, General Contractor, Business Developer, Project Manager and Program Manager Consultant for public and private entities
- Experience with Design-Bid-Build, Design-Build, Design-Build-Finance
“Give me six hours to chop down a tree and I will spend the first four sharpening the axe.”

ABRAHAM LINCOLN
Monroe Capital Improvement Program (CIP) Background

Sharpen the Saw Summit

Sharpen the Saw Summit Observation & Recommendations

Sharpen the Saw Summit Summit Benefits
Largest County in Florida by area (3,738 sq. miles); only 983 sq. miles is land; two-thirds is protected as natural reserves and virtually uninhabited.
Monroe County 5-year CIP Project List

a. Bernstein Park ($5.3M)
b. Plantation Key Government Complex ($11M + $7M)
c. Magnolia Public Works
d. Rockland Key Public Works
e. Chillers
f. Communication Tower
g. Higgs Beach I
h. Higgs Beach II
Monroe County 5-year CIP Project List (continued)

a. Atlantic Street Relocations (Reynolds St. Pier Design)
b. Scenic Vistas
c. Crawl Key Fire Training Academy ($2.2M)
d. Marathon Library ($4.5M)
e. Big Pine Key Swim Hole
f. Cudjoe/Summerland Fire Station ($4.53 M)
g. Sugarloaf Fire Station
h. Rowell’s Waterfront Park

i. Ongoing Capital Replacement Projects

*Projects listed were limited to those with highest priority and excludes infrastructure projects part of the Monroe County Roadway Program.
# Monroe County CIP Master Schedule

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bernstein Park</td>
<td>Mon 5/13/13</td>
<td>Wed 7/12/17</td>
<td>$5,100,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Magnolia Public Works</td>
<td>Thu 1/1/14</td>
<td>Mon 6/13/16</td>
<td>$800,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Plantation Key Court House</td>
<td>Wed 3/5/14</td>
<td>Wed 10/31/18</td>
<td>$18,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Crawl Key fire Academy</td>
<td>Wed 5/21/14</td>
<td>Sat 8/10/17</td>
<td>$1,970,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Atlantic St Relocation</td>
<td>Mon 6/30/14</td>
<td>Fri 7/7/17</td>
<td>$3,227,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Marathon Library</td>
<td>Mon 9/1/14</td>
<td>Fri 4/28/17</td>
<td>$3,100,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Scenic Vistas</td>
<td>Tue 9/16/14</td>
<td>Fri 12/9/16</td>
<td>$1,200,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Rockland Key</td>
<td>Fri 10/17/14</td>
<td>Fri 2/1/19</td>
<td>$6,900,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Higgs Beach</td>
<td>Mon 12/15/17</td>
<td>Wed 4/12/17</td>
<td>$1,500,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Big Pine’s Water Front Swimming</td>
<td>Mon 2/2/15</td>
<td>Fri 12/1/17</td>
<td>$1,850,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>JB Chillers and Comm Tower</td>
<td>Wed 6/10/15</td>
<td>Fri 5/12/17</td>
<td>$1,535,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Cudjoe Fire Station</td>
<td>Tue 7/7/15</td>
<td>Tue 12/12/17</td>
<td>$4,575,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Rowell’s Water Front Park Phase</td>
<td>Sat 8/1/15</td>
<td>Thu 2/15/18</td>
<td>$980,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Rowell’s Water Front Park Phase</td>
<td>Mon 4/3/17</td>
<td>Tue 3/31/20</td>
<td>$1,450,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Sugarleaf Fire Station</td>
<td>Tue 8/1/17</td>
<td>Fri 3/1/19</td>
<td>$3,500,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Marathon EOC</td>
<td>Sat 6/1/19</td>
<td>Thu 12/31/20</td>
<td>$5,475,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Project Overview

- Model Program Timeline
- Project Prioritization
- “Full Wall” Interactive Planning
- Resource Leveling
- What-if? Scenario Analysis
- Stakeholder Input & buy-in
- Cashflow Forecasts
Project Overview

- Model Program
- Project Prioritization
- "Full Wall" Interactive Planning
- Resource Leveling
- What-if Scenario Analysis
- Stakeholder Input & buy-in
- Cashflow Forecasts
CIP Project Locations spread throughout a single road with an approximate distance of 110 miles (traveling time from Key Largo to Key West approximately 2 hours 15 minutes)***
Monroe County PMO Staff at Time of ISP

Doug Sposito  
Director of Project Management

John Yongue  
Project Manager 1

Dan Bensley  
Project Manager 2

Chris Rivera  
Project Manager 3

Monroe County PMO Roles & Responsibilities

Monroe County PMs are involved from project conception to project programming, permitting, design, procurement, construction management and closing for the County.

PM support from the design and construction Team is required as part of each project contract.
# Monroe County PMO CIP Assignments

<table>
<thead>
<tr>
<th>#</th>
<th>TASK</th>
<th>PM</th>
<th>ALT/PM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Rowells Marina</td>
<td>DS</td>
<td>CR</td>
<td>UPPER</td>
</tr>
<tr>
<td>3</td>
<td>Sprint Tower Repairs</td>
<td>DB</td>
<td>JY</td>
<td>LOWER</td>
</tr>
<tr>
<td>5</td>
<td>Higgs Beach Sand Phase 1</td>
<td>DB</td>
<td>JY</td>
<td>LOWER</td>
</tr>
<tr>
<td>6</td>
<td>Higgs Beach Sand Phase 2</td>
<td>DB</td>
<td>JY</td>
<td>LOWER</td>
</tr>
<tr>
<td>7</td>
<td>Higgs Beach Trail</td>
<td>DB</td>
<td>JY</td>
<td>LOWER</td>
</tr>
<tr>
<td>10</td>
<td>Reynolds St. Vista</td>
<td>DB</td>
<td>CR</td>
<td>LOWER</td>
</tr>
<tr>
<td>11</td>
<td>Atlantic St Relocation</td>
<td>JY</td>
<td>DB</td>
<td>LOWER</td>
</tr>
<tr>
<td>17</td>
<td>PK Court House</td>
<td>DS</td>
<td>ALL</td>
<td>UPPER</td>
</tr>
<tr>
<td>18</td>
<td>PK WW Decommm</td>
<td>CR</td>
<td>JY</td>
<td>UPPER</td>
</tr>
<tr>
<td>19</td>
<td>Roth WW Decommm</td>
<td>CR</td>
<td>JY</td>
<td>UPPER</td>
</tr>
<tr>
<td>21</td>
<td>Marathon Library</td>
<td>DS</td>
<td>DB</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>22</td>
<td>Crawl Key Fire Training</td>
<td>JY</td>
<td>CR</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>26</td>
<td>Rockland Key Public Works</td>
<td>DS</td>
<td>DB</td>
<td>LOWER</td>
</tr>
<tr>
<td>29</td>
<td>Summerland FS</td>
<td>DS</td>
<td>DB</td>
<td>LOWER</td>
</tr>
<tr>
<td>30</td>
<td>Bernstein Park</td>
<td>JY</td>
<td>CR</td>
<td>LOWER</td>
</tr>
</tbody>
</table>
Monroe County CIP Challenges

1. Geographical constraints
2. Scarcity of skilled PMs and qualified personnel
3. Extensive and unpredictable permitting
4. Resource allocation
5. Unforeseen tasks and maintenance projects
6. Limited amount of participating bidders
7. Booming neighboring markets
8. High construction costs
9. Different stakeholders expectations/project reporting
10. Political Environment
11. Timing of Funding
12. 5 year CIP time constraint
SHARPEN THE SAW
SUMMIT
Monroe County & PMA’s ISP
Monroe County CIP Team and Participants of the IPS

Roman Gastesi  
County Administrator

Doug Sposito  
Project Manager

Tina Boan  
Sr. Director of Budget & Finance

Robert B. Shillinger, Jr.  
County Attorney

Kevin G. Wilson  
Assistant County Administrator/Senior Engineer

Kevin Madok  
Sr. Director of Strategic Planning

Ann Riger  
Contract Administrator

Melissa Wilson  
Procurement

PMA

Noel Alvarez  Francisco Cruz  Jaime E. Sobrino
<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION</th>
<th>DESCRIPTION</th>
<th>PARTICIPANTS</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 9:00 AM</td>
<td>Project Team Kick Off: Introductions Process Overview Discuss Expectations</td>
<td>PMA shares process overview and anticipated goals of the exercise with planned deliverables.</td>
<td>Noel Alvarez (PMA Team Leader), Francisco Cruz (Planner), Jaime E. Sobrino Monroe County Project Team: Roman Gastesi, Kevin Wilson, Doug Sposito, Kevin Madok, Tina Bone,</td>
<td>Give the project team a “heads-up” and answer any questions team members may have about the process and overall goal of the Summit</td>
</tr>
<tr>
<td>9:00 – 10:30 AM</td>
<td>Program Scope Review</td>
<td>Session to review and understand Project Scopes and General Timelines</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, Roman Gastesi, K. Wilson, D. Sposito</td>
<td>Detailed discussion from a project management perspective</td>
</tr>
<tr>
<td></td>
<td>Program Schedule Review (Session 1)</td>
<td>Session to review and understand Project Milestones, Schedules and Constraints</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito</td>
<td>Understand critical and near-critical paths, key interfaces, project controls perspective on project schedule</td>
</tr>
<tr>
<td>LUNCH 12:00 – 1:00 PM</td>
<td>Program Schedule Review (Session 2)</td>
<td>Session to review and understand Project Milestones, Schedules and Constraints</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito</td>
<td>Understand critical and near-critical paths, key interfaces, project controls perspective on project schedule</td>
</tr>
<tr>
<td>2:15 – 3:00 PM</td>
<td>Resource Assessment</td>
<td>Review of Internal and External Resource Allocation for Program and Projects</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito</td>
<td>Develop detailed understanding of available resources to update resource requirements</td>
</tr>
<tr>
<td>BREAK – 15 MIN.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:15 – 4:00 PM</td>
<td>Procurement Strategy</td>
<td>Review procurement process and contracting methods for work and assess legal requirements</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito, T. Bone, K. Madok</td>
<td>Understand County procurement process and requirements and impacts to program schedule</td>
</tr>
<tr>
<td>4:00 – 5:00 PM</td>
<td>Design Budget Review with Funding Assessment</td>
<td>Review of Design Budget allocations and funding sources</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito, K. Madok, T. Bone</td>
<td>Understand budget, contingency reserves, funding allocation &amp; requirements</td>
</tr>
</tbody>
</table>
# Sharpen the Saw Summit Agenda – Day 2

<table>
<thead>
<tr>
<th>TIME</th>
<th>SESSION</th>
<th>DESCRIPTION</th>
<th>PARTICIPANTS</th>
<th>PURPOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 9:00 AM</td>
<td>Project Team Kick Off: Introductions Process Overview Discuss Expectations</td>
<td>PMA shares process overview and anticipated goals of the exercise with planned deliverables.</td>
<td>Noel Alvarez (PMA Team Leader), Francisco Cruz (Planner), Jaime E. Sobrino Monroe County Project Team: Roman Gastesi, Kevin Wilson, Doug Sposito, Kevin Madok, Tina Bone,</td>
<td>Give the project team a “heads-up” and answer any questions team members may have about the process and overall goal of the Summit</td>
</tr>
<tr>
<td>9:00 – 10:30 AM</td>
<td>Program Scope Review</td>
<td>Session to review and understand Project Scopes and General Timelines</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, Roman Gastesi, K. Wilson, D. Sposito</td>
<td>Detailed discussion from a project management perspective</td>
</tr>
<tr>
<td>BREAK – 15 MIN.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:45 – 12:00 PM</td>
<td>Program Schedule Review (Session 1)</td>
<td>Session to review and understand Project Milestones, Schedules and Constraints</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D. Sposito</td>
<td>Understand critical and near-critical paths, key interfaces, project controls perspective on project schedule</td>
</tr>
<tr>
<td>LUNCH 12:00 – 1:00 PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 – 2:15 PM</td>
<td>Program Schedule</td>
<td>Session to review and</td>
<td>N. Alvarez, F. Cruz, J. Sobrino, K. Wilson, D.</td>
<td>Understand critical and near-</td>
</tr>
</tbody>
</table>

**NO LIGHTHOUSE MEETING TODAY?**

**SHARPEN THE SAW TIME!**

© PMATechnologies 2016
NetPoint Model Program Timeline (continued)
NetPoint Model Program Timeline (continued)
## Resource Assignment per Activity

Current Rate of Resource Assignment per Project Phase (Bernstein Park)

<table>
<thead>
<tr>
<th>#</th>
<th>Phase</th>
<th>Distribution</th>
<th>Rate</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Permitting</td>
<td>Monthly</td>
<td>0.3, 0.3</td>
<td>JY, CR</td>
</tr>
<tr>
<td>2</td>
<td>RFP &amp; Const. Award</td>
<td>Monthly</td>
<td>0.3, 0.3</td>
<td>JY, CR</td>
</tr>
<tr>
<td>3</td>
<td>Construction</td>
<td>Monthly</td>
<td>0.3, 0.3, 0.1</td>
<td>JY, CR, DS</td>
</tr>
</tbody>
</table>

1 month = 173 hours = 1 Full Time Employee (FTE)

**Example Rate Calculation**

Rate = 0.3 X 173 hrs. = 52 hrs. per month
NetPoint model with existing PMs (excluding Maintenance Projects)
SHARPEN THE SAW
SUMMIT RESULTS
Monroe County & PMA’s ISP
Sharpen the Saw Summit Outputs

✓ Updated Program Timeline
✓ Resource Requirements
✓ Alternative Cost Loaded Schedule (Best Case & Worst Case Scenarios)
✓ Contingency Reserves
✓ Example Reporting Template
NetPoint Model of What-if Scenario
Final NetPoint Resource Allocation Plan

MONROE COUNTY, FLORIDA
2015 - 2020 CAPITAL PLAN
(As Planned - Timeline Driven)
Sharpen the Saw Summit Observations

1. Immediate need for additional resources to handle the demands of adequately managing the CIP projects

2. Focusing on quick establishment of Project Controls (processes and tools) to appropriately track and measure critical CIP projects

3. Exploring opportunities to closely monitor to improve long pre-construction durations

4. Enhancing CIP reporting mechanisms that enable visibility of program status by higher level management and stakeholders
PMA Recommendations as a Result of the Summit

1. Secure additional resources to handle the anticipated program management demands

2. Establish Project Controls

3. Develop Reporting Mechanisms for CIP

4. Identify opportunities to improve design deliverables and permitting release
PMA Project Controls Recommendations

2015-2020 CIP COST PERFORMANCE

ANNUAL CASH FLOW (x 1,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>$2,741</td>
<td>$10,447</td>
<td>$27,412</td>
<td>$22,781</td>
<td>$5,201</td>
<td>$856</td>
</tr>
<tr>
<td>Actual</td>
<td>$2,741</td>
<td>$16,447</td>
<td>$27,412</td>
<td>$22,781</td>
<td>$5,201</td>
<td>$856</td>
</tr>
</tbody>
</table>

Variance: It is due to recent...

MONTHLY CASH FLOW (x 1,000)

EXECUTIVE OVERVIEW

Accomplishments

Issues

Actions
SHARPEN THE SAW
SUMMIT BENEFITS

Monroe County & PMA’s ISP
<table>
<thead>
<tr>
<th></th>
<th>Monroe County “Sharpen the Saw Summit” Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Secured additional resources from Board of County Commissioners (BOCC).</td>
</tr>
<tr>
<td>2.</td>
<td>Clear illustration of resources needed by Monroe County to execute the CIP within the 5 year plan.</td>
</tr>
<tr>
<td>3.</td>
<td>Simultaneous evaluation of all projects in the CIP showed relationships and overlapping constraints between projects.</td>
</tr>
<tr>
<td>4.</td>
<td>Specific identification of when resources would be needed, how many and for how long.</td>
</tr>
<tr>
<td>6.</td>
<td>NetPoint clearly conveyed relationship between projects in the CIP, the execution process and role of each department.</td>
</tr>
</tbody>
</table>
Monroe County “Sharpen the Saw Summit” Benefits
PMA Team for Monroe County

From left: Francisco Cruz, Noel Alvarez and Jaime E. Sobrino
Thank You!

Kevin G. Wilson  PE  
wilson-kevin@monroecounty-fl.gov

Jaime E. Sobrino  AIA, LEED AP, PMP  
jsobrino@pmaconsultants.com