focus on community
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COLLABORATION PRACTICUM

Facilitation Tools

FDOT

ACKNOWLEDGEMENTS

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For more information about NOAA's class, please visit:

Planning and Facilitating Collaborative Meetings
https://coast.noaa.gov/digitalcoast/training/planning-and-facilitating

Facilitation Tools

Tools and techniques can be used to accomplish objectives and keep participants engaged. These tools not only assist with meeting the established objectives, but they also help to reduce conflict, build rapport, and ensure that everyone has the opportunity to participate. By considering the objective of the meeting or session, organizers can choose the right tool for the job. There are many tools available for facilitators, and some create their own. These are a few that are used in the course.

Table 1: Tool Objectives

Tool Objective	Steps in the Collaborative Process						Anytime
	Assess Collaborative Potential	Engage Stakeholders	Understand the Issue	Generate Alternatives	Select the Alternatives	Implement Alternatives	
Brainstorming							x
Criteria Ranking					x		
Exit Survey							x
Electronic Polling							x
Flip Charting							x
Forced Ranking					x		
Gantt Chart						x	
Ground Rules							x
Impact-Effort Grid					x	x	
Multi-voting		x			x		
Participatory Mapping		x	x	x	x		
Perspective Swap			x		x		
Process Agenda							x
Ten-Minute Priorities					X		

Brainstorming

Purpose:
Brainstorming is an effective method to gather perceptions and ideas. The goal is to generate as many ideas as possible, with ideas building on one another. Participants should have equal status, and their ideas should be presented without comment or evaluation.

Process:
In groups of 6 to 10 people, participants share their ideas. If the group is too small, participants are not stimulated to generate ideas and build alternatives off others. If it is too large, equal participation is difficult to achieve. The facilitator follows these steps:

1. Use round-robin (or another technique that ensures everyone's participation) to collect ideas from each participant.
2. List *all* input on easel pads without evaluation or criticism.
3. Ask for clarification as required.
4. Keep participants from critiquing ideas, or getting side tracked discussing one of the ideas.

Variations:
Anonymous Brainstorming – This variation can be used if participants are polarized, or if there is a need for confidentiality. Many people can participate when using this technique. The facilitator asks each participant to anonymously write down their idea(s) on a piece of paper or an index card, or a website. The facilitator reads each idea to the group and lists the ideas on the easel pads, or provides an electronic copy to the participants.

Roving Flip Charts – The questions are on easel charts posted around the room. Participants will rove in small groups from one chart to the next, writing down their input on the chart. This technique allows everyone to participate. The facilitator follows these steps:

1. Write one probing, open-ended question on each flip chart. Give each chart a number.
2. Place the charts around the room with space between them.
3. Place several markers at each flip chart.
4. Ask the participants to number off. There should be equal or fewer groups than charts. Each group should have no more than 10 participants in it.
5. Each group should go to the chart that corresponds with the number.
6. Ask everyone to stay at the chart until it is time to go to the next one.
7. They may write responses individually or as a group.
8. After 3 minutes, ask the participants to rotate to the next chart.

Continue until the participants have been to each chart.

Criteria Weighting

Purpose:
Criteria ranking is a tool to compare proposed alternatives quantitatively. Groups can rate each alternative using criteria that are relevant to a project and ultimately determine which solution best meets those criteria.

Process:

1. Establish criteria against which participants will rate the possible solutions. This can be done by a small group of experts, or in a brainstorming session with stakeholders.
2. Assign weights to the criteria by importance. The most important criteria will have the highest weight. This can be done, using brainstorming, a subcommittee, multi-voting, or another tool. In this example, "Cost" has the most "weight," so it is the most important criteria. Criteria may have the same weight as another criterion in this example.
3. Give each participant a ballot as shown in Figure 2. Grade each solution on how well it meets the criterion. Use ballots, polling devices, or another tool to the alternatives. In this example, no two houses can be given the same grade within a criterion. For example, there can be only one C for cost, the one that costs the most.
4. Once each ballot is turned in, enter the grades for each person on the criteria tally sheet. Convert the grades to numbers using an education scale where A=4.0, B=3.0, and so on. Tally the results for each criterion as shown in Figure 3.
5. Enter the score for each criterion into the Criteria Grid, as shown in Figure 1.
6. Add the scores for the final total.
7. In the example below, there are 3 alternatives; the best alternative for that solution is given an A with a score of 243.
8. Ground truth the solution with the group. Develop action plans and implement the alternative with the highest total.

Example:
A family of four has narrowed the options for purchasing a house down to 3 houses and is evaluating the best house for them based on criteria they decided on together.

Figure 1 – Criteria Ranking Grid:

Options	**House 1**	**House 2**	**House 3**
Criteria (weight)			
Least Cost (5)	75	40	60
Bedrooms (4)	40	70	70
Bathrooms (3)	39	33	36
Neighborhood (3)	33	48	27
Schools (4)	56	40	48
Total Points	243	231	241

House 1 wins, House 3 is in the middle, and House 2 is last.

Figure 2 – Ballots:

Mom

Options	House 1	House 2	House 3
Criteria	Grade each house A, B or C on how well it meets the criteria Use each grade only once per row.		
Least Cost	A	C	B
Bedrooms	C	A	B
Bathrooms	A	B	C
Neighborhood	B	A	C
Schools	A	C	B

Dad

Options	House 1	House 2	House 3
Criteria	Grade each house A, B or C on how well it meets the criteria Use each grade only once per row.		
Least Cost	B	C	A
Bedrooms	C	A	B
Bathrooms	B	A	C
Neighborhood	B	A	C
Schools	C	B	A

Sister

Options	House 1	House 2	House 3
Criteria	Grade each house A, B or C on how well it meets the criteria Use each grade only once per row.		
Least Cost	A	B	C
Bedrooms	C	B	A
Bathrooms	B	C	A
Neighborhood	B	A	C
Schools	A	B	C

Brother

Options	House 1	House 2	House 3
Criteria	Grade each house A, B or C on how well it meets the criteria Use each grade only once per row.		
Least Cost	A	C	B
Bedrooms	C	B	A
Bathrooms	C	A	B
Neighborhood	C	A	B
Schools	A	C	B

Figure 3 – Tally Results:

Least Cost			Weight = 5
	House 1	House 2	House 3
Mom	A	C	B
Dad	B	C	A
Sister	A	B	C
Brother	A	C	B
Total Score	15	9	12
Multiplied by weight	75	45	60

Bedroom			Weight = 4
	House 1	House 2	House 3
Mom	C	A	B
Dad	C	A	B
Sister	C	B	A
Brother	C	B	A
Total Score	8	14	14
Multiplied by weight	40	70	70

Bathroom			Weight = 3
	House 1	House 2	House 3
Mom	A	B	C
Dad	B	A	C
Sister	B	C	A
Brother	B	C	A
Total Score	13	11	12
Multiplied by weight	39	33	36

Neighborhood			Weight = 3
	House 1	House 2	House 3
Mom	B	A	C
Dad	B	A	C
Sister	B	A	C
Brother	C	A	B
Total Score	11	16	9
Multiplied by weight	33	48	27

Schools			Weight = 4
	House 1	House 2	House 3
Mom	A	C	B
Dad	C	B	A
Sister	A	B	C
Brother	A	C	B
Total Score	14	10	12
Multiplied by weight	56	40	48

Exit Survey

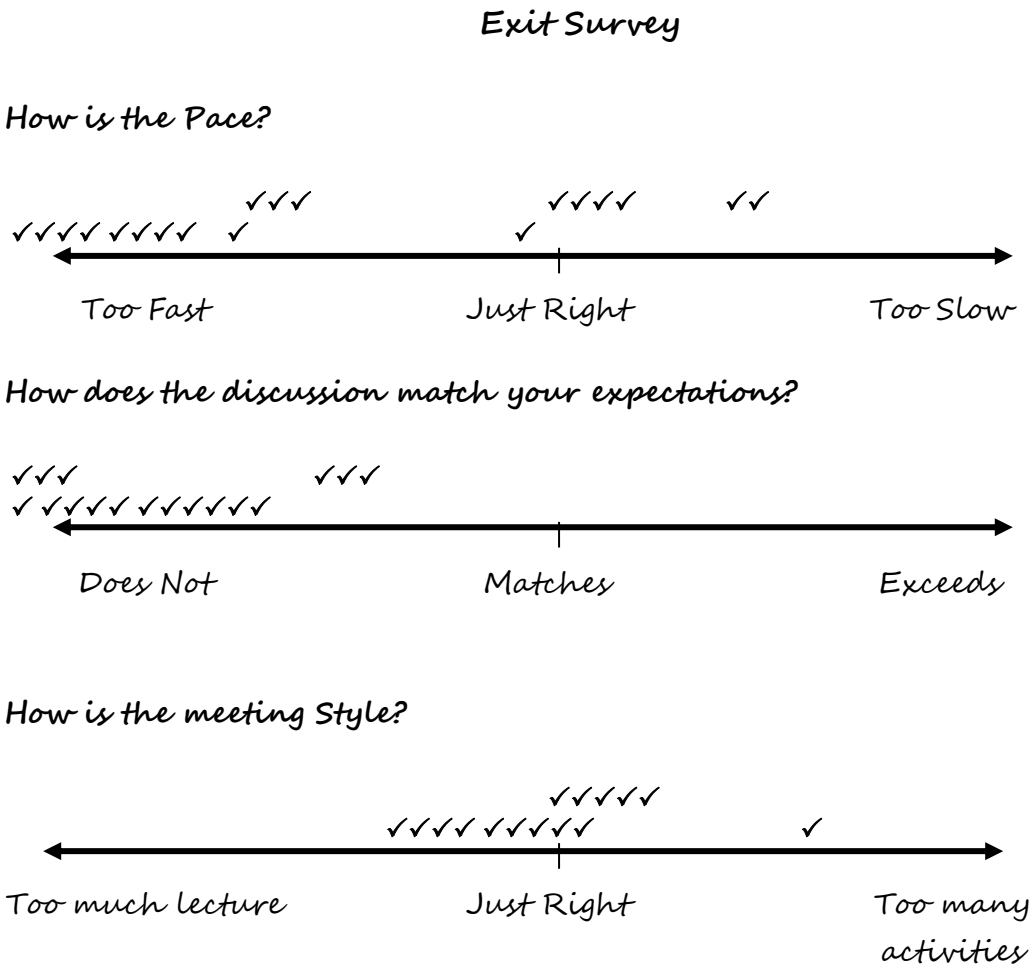
Purpose:

The exit survey allows the facilitator to take the pulse of the participants at breaks or before the next meeting. This strategy provides opportunities for discussion by allowing the participants to anonymously speak up about something that is not working for them, and it will build buy-in to the process by giving participants a chance to comment.

Process:

1. Write two or three questions on an easel pad, with a scale. When using this tool during a meeting, ask questions that can be addressed during the meeting. Alternatively, use this at the end of the meeting to inform the process for the next meeting.
2. Ask participants to use a marker to place a check mark on the scale as they leave the room.
3. When the participants return, discuss the results with them.
4. Allow them to expand upon their responses, and make adjustments as necessary.
5. Be careful not to give extra weight to the outlier responses.

Example:



Electronic Polling

Purpose:
Electronic polling using mobile phones or polling devices allows participants to anonymously rank, prioritize or provide feedback using an electronic devise. Everyone can participate, and the results can been viewed as they come in.

Process:
Depending on the available equipment or service, this will change. A quick google search of audience polling services will return several.

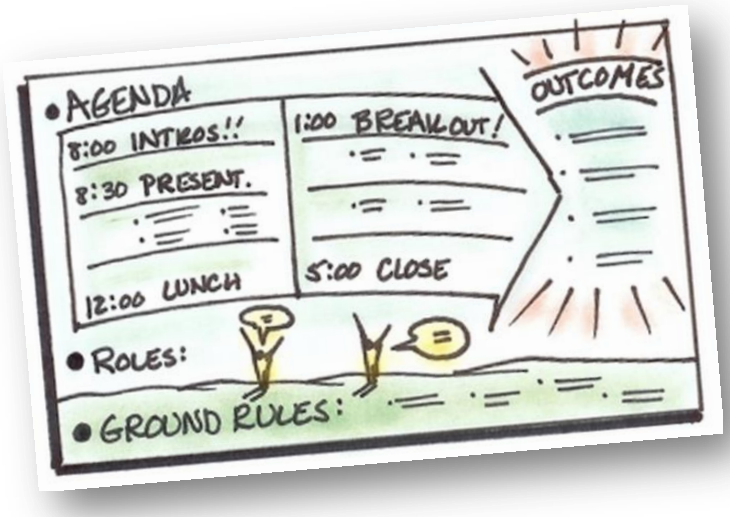
Flip Charting

Purpose:
Using an easel and pad, the recorder can write down comments from the participants for review later. This allows participants to review the agreements at their own pace, recognize that they have been heard and speak up if they have been misunderstood. It allows participants to see and hear other's input.

Process:

- Position the flip chart where everyone can see it.
- Stand to the side while writing. Face the audience while listening. If doing both, do not face the flip chart squarely—stand at an angle to both.
- Write in large block letters (1–1.5-inches high).
- Use as few words as possible.
- Make sure everyone knows what any abbreviations mean.
- Highlight key words or ideas by circling, underlining, boxing, or starring them.
- Don't worry about spelling. State that spell check is not on!
- Color can make a difference. Ensure that the markers have plenty of ink and are dark enough to be seen by everyone in the room.
- Alternating colors allows participants to tell at a glance when one thought stopped and the next began.
- Placing a border around your chart can help your audience focus on what is written.
- Using graphics to demonstrate points can assist the audience with remembering the points.

Variation:
Graphic facilitation is a technique that uses drawings as well as words to capture the notes. It allows participants to relate through another type of charting. This may be difficult for some facilitators, although many of the charts can be developed before the meeting, and simple graphics, like bullets, can be applied by most recorders. To host a course that teaches facilitators how to listen, process, and draw, contact "ocm.training.request@noaa.gov"



Forced Ranking

Purpose:
This tool is for prioritizing options using specific criteria where each participant has input.

Process:

1. Write the criteria to be considered at the top of the chart.
2. List all of the alternatives in a column below the criteria, and number them.
3. Ask participants to rank the alternatives from best to worst as it relates to the criteria.
4. Using round robin, ask each participant to tell you where in the ranking Alternative 1 is.
5. Place that number under the rank. (If the participant says: “I put it 3rd” write 3 under rank).
6. Ask the next participant where they placed alternative 1. Add that rank to the first participant’s.
7. Continue in the manner until you have numbers for each of the participants next to the first alternative.
8. Move to alternative 2 and repeat steps 4-7. Continue through all the alternatives.
9. When all the alternatives have been listed, add up each row and record the total.
10. The winner is the alternative with the lowest number.

Variation:
Anonymous Forced Ranking should be used if the participants are private about their ranks. Use ballots instead of round robin.

Criteria = Least Cost

Most Impact	**Rank**	**Total**
House 1	**3 + 1+ 1+ 2**	**= 7**
House 2	**1 + 2+ 3 +3**	**= 9**
House 3	**2 + 3+ 2+ 1**	**= 8**

Gantt Chart

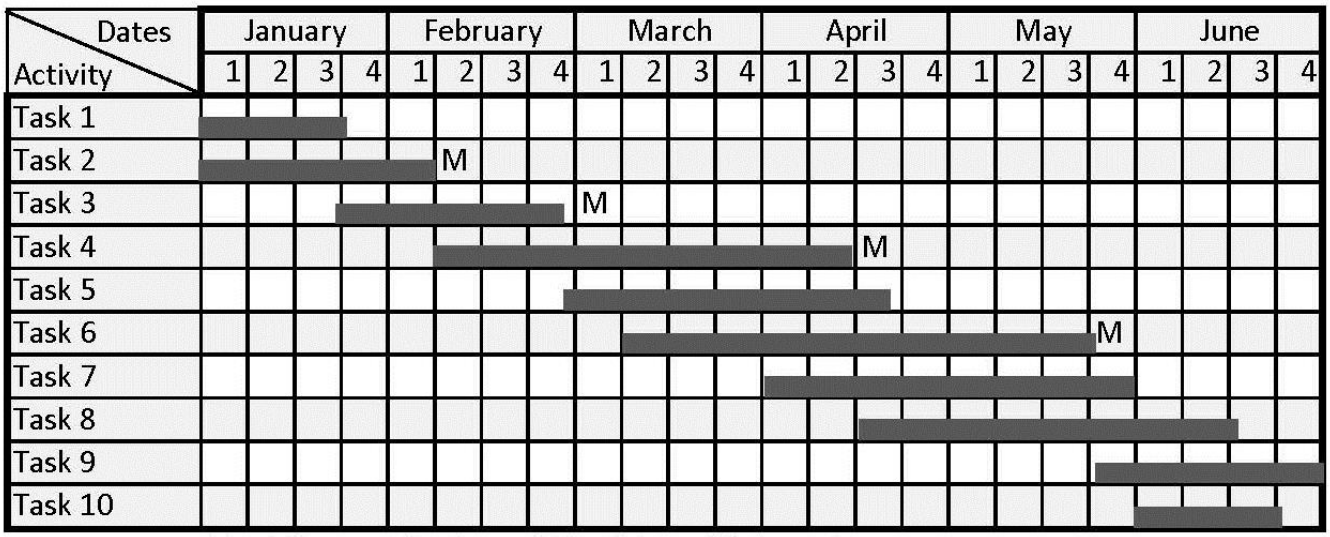
Purpose: The Gantt chart is a project scheduling tool. It can be used to determine when project tasks must be complete and which tasks are dependent on others. Placing milestones into the chart allows the project team to evaluate the progress of the project.

Process:

1. Break the project down into tasks.
2. Estimate the time for each task.
3. Determine the sequence of the tasks.
4. List the tasks in the first column of the chart.
5. Draw a bar from the task start time to the completion.
6. Place the milestones into the chart.

Example:

Gantt Chart



M = Milestone Project will be delayed if these dates are not met

Ground Rules

Purpose: Ground rules are used so the group can agree on how they will interact with each other during the meeting or process. This is a great facilitator tool when disrupting behaviors of taking the meeting off track.

Process:
The ground rules can be established by the facilitator and the planning team before the meeting if group buy-in is not necessary to the success of the meeting. Large public meetings often state the ground rules without gaining input. The leader or a planning group may develop rules before the meeting, and ask the group for input at the meeting if there is not a lot of time to develop the rules and the issue is not contentious. If there will be a long process, where the group must work together to solve a problem, the group members should develop all the rules at the first meeting.

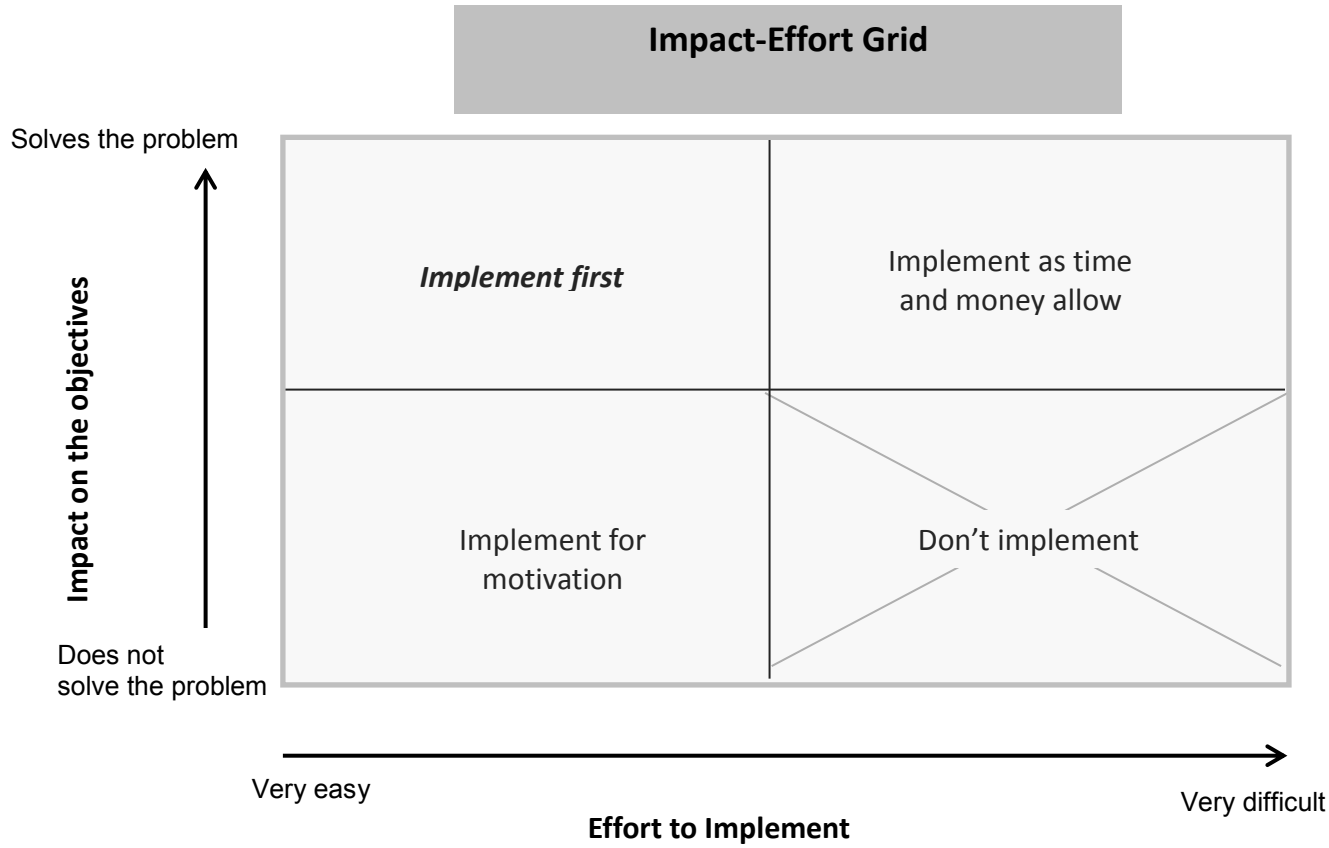
Impact-Effort Grid

Purpose: Impact-effort grids allow participants to see how each alternative might be prioritized for implementation. Participants rank each alternative, either individually or as a group, to see where it falls in the grid.

Process:

1. Participants rate the impact each alternative will have on the outcomes, will it solve the problem or not. This can be done using electronic polling, with dots that are averaged or any other technique such as roving flip charts or exit survey.
2. This works best if the participants are only given two choices, it solve the problem or it does not. Then the choice falls within the grid. Further refinement can take place after the solutions are sorted.
3. Participants rate the effort it will take to implement each alternative, using the tools listed in step 1 above. Defining effort is important; in order to rank the alternatives, participants need to know what effort means. This can be cost, time, inconvenience or some other qualifier.
4. Using the ratings, the alternatives are placed into one of the four quadrants. For example, if an alternative will have a large impact on the objectives, and it is low effort, it will be written in the upper-left quadrant. This quadrant is low hanging fruit and should be implemented first.

Example:



Multi-voting

Purpose: This tool is used to prioritize lists. Every participant can provide input on the priorities.

Process:

1. Post the list of alternatives for everyone to see.
2. Give each participant a specified number of dots. The quantity will vary based on the number of alternatives that are being prioritized. The general rule of 3 is to divide the number of alternatives by 3, and round to the nearest integer. So if you have 14 choices, each participant will have 5 dots.
3. Setting ground rules for this activity is important.
4. Consider how many dots a participant can put on any one option. The disadvantage to allowing more than one dot per alternative is if that alternative doesn't rise to the final list, the participant may feel less bought into the results. Consider asking participants to put a number on their dots to avoid dot trading, dot loading (several dots on one alternative).
5. Working individually, participants post the dots next to the preferred alternative to indicate their preferences.
6. Tally the results for the priority list.

Variations:

Anonymous Prioritizing – Provide anonymity by asking participants to write down the top three choices on index cards and turn them in for tallying. This avoids dot bias, dot trading, and peer pressure.

Participatory Mapping

Purpose: Allow participants to visually show others what is important to them. This tool is especially useful in addressing problems that have a geospatial component (such as land use planning) or a physical or structural component (such as building design). It allows the participants to visualize the issue, share their visions, and consider alternative solutions.

Process:

1. Divide the participants into groups of 8-10 people.
2. Give each group a map or drawing of the area for discussion.
3. Provide each group with a stack of blue and a stack of yellow (or any two colors) Post-it notes.
4. Participants write the names of (most important) places that they want to protect on Post-it notes, one place per note.
5. Participants write the names of alternative solutions on different color Post-it notes, one solution per note.
6. Participants stick Post-it notes on the map in appropriate places.
7. Use the information on the maps to develop solutions, begin conversations about potential conflicts, or inform policies.

Variations:
Group Art – If the issue does not have a geospatial component, provide butcher paper and allow participants to draw their input.

Charettes are an intense design session in which a team concentrates on a particular problem and proposes solutions. It is an active approach that involves learning by doing. It often involves architects and engineers to support the community as they develop community planning projects such as new planning and zoning ordinances, or new developments.

Perspective Swap

Purpose: Understand another point of view and hear your perspective described by another. All perspectives in the room will be known to each participant.

Process:

1. Facilitator asks participants to pair off.
2. Pairs discuss what they each have to gain by addressing the issue.
3. After each person has shared with his or her partner, participants reconvene into larger group.
4. In round-robin format, each participant shares the partner's perspective on the issue and what the partner has to gain by participating.
5. Facilitator records responses on an easel pad.
6. Facilitator leads a discussion to ensure understanding of all perspectives.

Variation:
After the pairs discuss each perspective, time is called and each pair finds another pair. The two pairs chat briefly, sharing all four perspectives, each person introducing their partner. Once all perspectives have been shared, each person gets a new partner within the foursome and then the new pairs go off and find another pair. This is repeated until each participant has introduced five other participants in a structured networking activity.

Adapt the discussion to the circumstance. Pairs might discuss what they value about the alternatives, what they would like to see happen, etc.

Process Agenda

Purpose: The process (facilitator) agenda describes how the meeting will proceed, and what will be accomplished in each session. It includes the same information as the content agenda with additional information that the facilitator (or meeting leader) needs to ensure that the meeting runs smoothly. Process agendas should include the following information:

- Overall goal of the meeting, and any desired outputs.
- Objectives for each session.
- Who will speak, and run each session.
- The process that will be used to accomplish each objective.
- Supplies that will be needed to perform the process (e.g., easel pads, markers, Post-it notes, dots)
- Timing and the estimated duration for each step in the process

Process:

1. Determine the meeting goal and outputs.
    a. Example: Goal is to solve the problem, the output is the solution
2. Determine what needs to be accomplished in order to reach the goal.
    b. Example: understand the skills each person can apply to the solution.
3. State these accomplishments in terms of objectives.
    c. Example: Participants will share their skills with other participants
4. Establish one session in the meeting for each objective.
    d. See agenda below
5. Once the meeting's objectives are laid out, determine how much time can be dedicated to each session.
    e. 30 min to learn skills
6. Determine what tool or technique will be used to meet the objective.
    f. Example: Perspective Swap variation
7. Develop the question that will be used and the explanation to initiate the process.
    g. Example: What unique skill do you have to address this problem?
8. Note all activities that will be done during the session.
    h. Example: There are 6 listed in the example agenda below
9. Estimate the time to complete each activity.
    i. Example: Step 2 is 5 min which in annotated at the end of the directions in parenthesis.
10. Add the times, and fill in the total time.
11. Fill in supplies needed and determine who will lead each session.

Variations:

Class room curriculum

Table 1: Example of a partially completed process agenda

Time Leader	**Process Agenda Example** **Activities and Objectives** **Meeting Goal and Output: A solution to the problem**	Materials
8:00 -8:10 Leader	**Welcome and Introduction** *Objective:* Participants know who is in the room, and who they represent *Tool:* Round Robin *Activities:* 1. Ask everyone to write their first name in large letters on both sides of the name tent. 2. Beginning with the person to your right, ask him/her to state their name and affiliation. 3. Continue around the table in order until all participants have stated their name and affiliation. Time=10min	Name tents Markers
8:10-8:40 Facilitator	**Introduction to Skills** *Objective:* Participants will understand the skills in the room. *Process Tool:* Skill Swap (a variation of Perspective Swap) *Activities:* *1.* Facilitator asks participants to partner with the person across from them and ask: What unique skill do you have to address this problem? (1 min) 2. Participants pair off and each person shares their skill with the partner. (5 min) 3. Facilitator asks participants reconvene into larger group (1 min) 4. In round-robin format, each participant shares his or her partner's perspective on the issue and what the partner has to gain by participating (15 min) 5. Facilitator records responses on an easel pad (ongoing) 6. Facilitator leads a discussion to ensure understanding of all perspectives (8 min) **Total Time: 30 min**	Markers (at least two colors that are easily seen by the audience) Easel pad
8:40-9:30 Facilitator	**Understanding the issue** *Objective:* Participants will develop a problem statement together. *Process Tool:* Problem Statement Template	Problem statement form Easel with

	Activities: *1.* Ask participants to review the problem statement form, and jot notes in each section. (5 min) 2. Ask each question and captures the input on the charts until each participant is satisfied that their answer has been captured (15 min) 3. Review the chart and ask someone to consider all the information and develop a strawman problem statement. (5 min) 4. Ask one person to share their strawman. (3 min) 5. Type the strawman onto the screen (1 min) 6. Set ground rules: a. No word smithing, questionable words will be highlighted for the editor b. Leave spelling grammar and punctuation to the editor. c. Leave your position outside the room, instead review for your issues. d. Participate in the discussion so that the problem statement is a good one. (1 min) 7. Ask the group to raise the hands if they want to change anything in the strawman. (20 min) 8. Capture responses on the screen. 9. Allow input until it becomes repetitive or circular. 10. Ask if everyone sees their issues in the statement without feeling polarized. 11. Is this our problem statement? 12. Let them know you will share the information with the editor during break for review. **Total Time: 50 min**	paper Markers Screen Projector Lap top Recorder
9:30-9:45	**Break**	
9:45-12:00	**Solutions** *Objective:* Participants will develop solutions to the problem together.	
12:00-1:00	**Lunch**	

Table 2: Process Agenda Template

Time	**Activities and Objectives**	**Setup and Materials**
Meeting Goal and Output:		
Start time Who will lead? Who will assist? End time	**Objective:** **Activities:** **Total time = minutes**	What materials are needed?
Start time Who will lead? Who will assist? End time	**Objective:** **Activities:** **Total time = minutes**	What materials are needed?

Add as many sections as needed to accommodate the objectives and sessions.

Ten-Minute Priorities

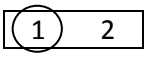
(Adapted from *The Fifth Discipline Fieldbook* by Senge, et al. 1994.)

Purpose:
Ten-Minute Priorities lets you compare alternatives against each other and pick the best one that addresses specific criteria. This one is useful if you have a lot of alternatives.

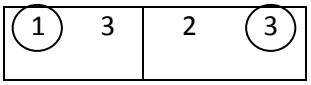
Process:

1. Decide on your criteria for evaluating the best option
2. In each small square on the worksheet (see below), circle the number corresponding to the strategy you prefer, using your agreed upon criteria.
3. Enter the number of times you voted for each strategy in Column A.
4. Add the group's points from Column A and list in Column B.
5. The higher the number, the more preferred option based on the selected criteria.

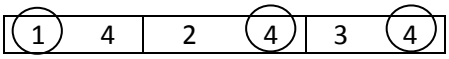
Example:
A family of four has narrowed the options for purchasing a house down to 5 houses and is evaluating the best house for them based on the criteria: **location**. Each family member completes the worksheet. This is how the Mom completes the sheet:



Mom prefers the location of house 1 as compared to house 2



Mom prefers the location of house 1 as compared to house 3 and prefers the location of house 3 as compared to house 2



Alternative Strategies	A Mom's Points	B The Family's Totals
House 1	3	15
House 2	0	2
House 3	2	9
House 4	3	10
House 5	2	4

The houses that will be considered, based on location, are houses 1 and 4, with house 1 scoring the highest, based on location.

Buy-In Assessment

This technique can be used when the facilitating leader suspects there will be resistance to supporting the process. The technique allows participants to self-assess and think about their expectations.

Technique:

1. At the start of the process or meeting, place an easel pad in front of the room with a scale and directions as shown below.
2. Ask participants to look at the scale and quietly self-assess their feeling about the meeting at that moment. Don't share the information.
3. As the meeting progresses, periodically ask the group to self-assess again, and then ask these questions:
    a. Have your ratings changed? Why?
    b. Are you more or less bought in to the process than you were at the start? Why?
4. Facilitator records participant responses to the questions on an easel pad.
5. This information will track increasing buy-in to the process and outcomes and reinforce participants' commitment.
6. Use this information to modify the process if necessary to ensure success.

How do you feel about this meeting right now?

1	2	3	4
I wish I were somewhere else.	*I'm going to wait and see.*	*I'm open and optimistic it will be good.*	*I'm sure this is going to be great!*

*Identify, **BUT DO NOT WRITE DOWN** your rating and your reasons.*

Force Field Analysis

The force field analysis is a structured method of looking at two opposing forces acting on a situation. It is useful for bringing all the factors that contribute to a situation to the surface so that barriers to resolving the situation can be identified. A force field analysis clarifies what needs to be done to succeed; the outcome is a thorough analysis of the situation and the problems that need to be solved. This analysis tool helps the group make more effective decisions; it looks at both the positive and negative forces that create the situation.

Technique:

1. Identify the topic, situation, or problem to be resolved.
2. Draw a line down the center of an easel sheet.
3. Brainstorm to identify all the forces (such as resources, skills, attitudes, and legislation) that will accomplish the desired outcome.
4. Brainstorm to identify all the forces that are barriers to the desired outcome.

Example:

Force Field Analysis

Outcome: Smooth traffic access to Nautilus Island.	
Forces that assist smooth traffic flow →	**Forces that hinder smooth traffic flow** ←
Road repairs	Continuing Storms
Public Works Budget	Cost
Department of Transportation Expertise	Different perspectives of the issue
Community willingness	Road Elevation
Understanding of erosion	Road location

Variations:

Following the same steps, a force field analysis can be conducted looking at the pros and cons, best case scenario and worst case scenario, assets and liabilities, opportunities and obstacles, strengths and weaknesses, or other combinations of opposing forces.

Sequential Questioning

Sequential questioning is a tool that uses a series of closed-ended questions to probe the group about the issue. The tool uncovers important information, needs, and issues related to the situation. This can be a challenging tool, since it will bring out divergent perspectives on the issue. It should be used in groups that are motivated to understand all sides of the situation.

Technique:

1. Before the meeting, develop a series of questions to ask the participants. The tool works best if the questions begin with the big picture and become more focused as the discussion progresses.
2. Write each question on an easel page. Cover up all the questions with the first one on top.
3. Reveal the first question and read it to the group. Don't reveal the following questions until you are ready to ask them.
4. Ask someone in the group to answer it, yes or no.
5. Ask for comments; invite everyone to share their perspective and reasons.
6. Note responses on the paper.
7. Strive to create a summary statement that addresses key ideas.

Example Questions:

The following questions were designed as examples that might be used by the facilitator of the planning team for Nautilus Island. They are intended to probe the stakeholder representatives to uncover new perspectives and build buy-in for the process.

1. The overall quality of life on Nautilus Island is reliant on easy access.
2. We are fully prepared to provide continuous easy access.
3. Our current system is robust enough to provide access in a constantly changing environment.
4. Our strategy to maintain easy access should be developed by the agency in charge.
5. The stakeholders completely understand the issue.
6. We have the best transportation system possible.
7. We have a flawless system in place for road maintenance as soon as damages occur.
8. We often have creative and productive discussions about the issue.
9. There is a high level of harmony and cooperation among the stakeholder representatives.
10. The residents are prepared to overcome barriers to the transportation issues.

Root Cause Analysis

Root cause analysis is a method for systematically analyzing an issue in order to identify the root causes—rather than the symptoms—of the problem. The process forces the group to look more deeply at the problem and deal with the causes. The results of this analysis lead to more complete and final solutions to problems, and because the underlying causes are identified, there is more buy-in for the solution from participants.

Technique:

1. Explain the difference between causes and effects to the group. Use examples that everyone can relate to (such as gridlock on a bridge). Is the halted traffic a cause or an effect? Point out that the effect, or symptom, cannot be solved, but the underlying causes can.
2. Once people identify the effect, ask them to list all of the possible causes. For example, ask them to list all the possible reasons the traffic is halted on the bridge.
3. Use cause-and-effect charting to thoroughly analyze the situation.
4. Divide an easel pad into three columns. Label the left column "cause," the middle column "effect," and the right column "solution."
5. Ask the group to brainstorm points of analysis for the problem (describe all of the components of the problem).
6. For each item, ask the group if it is a cause or an effect.
7. Write each item in the appropriate column and solicit information for the corresponding column. Using the muffler example, a participant may say fumes are part of the problem. Ask, "Are they a cause or effect?" (They're an effect.) Ask, "What is the corresponding cause?" (It's corrosion.)
8. Probe each item in the effect column to determine all the causes.
9. Once all the causes of the problem are identified, brainstorm solutions for each one.

Example:

Effect	Cause	Solution
Traffic gridlock	Road closure	Move or raise the road
	Road flooding	Build barriers to protect the road
	Road eroding, falling apart	Fix the old road raise the road