"Wicked Problems".

THINKING ABOUT PROBLEMS.

City planners and builders, as well as many other professions, deal with problems, sometimes called opportunities, all the time. Problem solving is the reason the professions exists. However, all problems are not alike. Understanding the type of problem being faced can make the difference in finding a good solution, or not – know thy enemy.

UNDERSTAND THE NATURE OF A "WICKED PROBLEM".

Social scientists and information technologists have defined one type of problem as "wicked". The use of the "wicked problems" idea is currently assigned to the tech world, but "wicked problems" are particularly endemic in city building. City planners need to know this idea. The term was originally coined by Horst Rittel; from Wikipedia comes the following:

> *"A wicked problem is one for which each attempt to create a solution changes the understanding of the problem. Wicked problems cannot be solved in a traditional linear fashion, because the problem definition evolves as new possible solutions are considered and/or implemented."*

The wickedness of the problem reflects the diversity among the stakeholders sharing the problem, the dynamic nature of political positions and the ever-changing ground of public policy. It is the *societal complexity* of these problems, not their technical complexity, that overwhelms most problem solving and project management approaches.

The usually reliable method of defining the problem before venturing into the world of solutions does not apply since every actuated or proposed solution re-defines the problem.

SPECIFIC ASPECTS OF "WICKED PROBLEMS".

Understanding the nature of problems helps find solutions. From Wikipedia:

- ***"*The problem is not understood until after the formulation of a solution**." Indeed, there is no definitive statement of 'The Problem'. The problem is ill-structured, an evolving set of interlocking issues and constraints.
- ***"Wicked problems have no stopping rule."*** Since there is no definitive 'Problem', there is also no definitive 'Solution'. The problem solving process ends when you run out of resources.
- ***"Solutions to wicked problems are not right or wrong",*** simply 'better, worse, good enough, or not good enough'.
- ***"Every wicked problem is essentially novel and unique."*** There are so many factors and conditions, all embedded in a dynamic social context, that no two wicked problems are alike, and the solutions to them will always be custom designed and fitted.
- ***"Every solution to a wicked problem is a 'one-shot operation'".*** Every attempt has consequences. As Rittel says, 'One cannot build a freeway to see how it works.' This is the 'Catch 22' about wicked problems: you can't learn about the problem without trying solutions, but every solution you try is expensive and has lasting unintended consequences which are likely to spawn new wicked problems.

- ***"Wicked problems have no given alternative solutions."*** There may be no solutions, or there may be a host of potential solutions, or another host that are never even thought of."

CHARACTERISTICS OF "WICKED PROBLEMS".

"Rittel and Webber's 1973 formulation of wicked problems in social policy planning specified ten characteristics [from Rittel, Horst W. J.; Melvin M. Webber (1973) in 'Dilemmas in a General Theory of Planning', *Policy Sciences* 4: 155–169]. The issue was further discussed by T. Ritchey 2007, 'Modelling Social Messes with Morphological Analysis.' [© Tom Ritchey, 2002]. Characteristics:

1. "There is no definitive formulation of a wicked problem.
2. "Wicked problems have no stopping rule.
3. "Solutions to wicked problems are not true-or-false, but good or bad.
4. "There is no immediate and no ultimate test of a solution to a wicked problem.
5. "Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial and error, every attempt counts significantly [and changes the nature of the problem].
6. "Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.
7. "Every wicked problem is essentially unique.
8. "Every wicked problem can be considered to be a symptom of another problem.
9. "The existence of a discrepancy representing a wicked problem can be explained in numerous ways.
10. The choice of explanation determines the nature of the problem's resolution.
11. "The social planner has no right to be wrong.
12. "Planners are liable for the consequences of the actions they generate."

"Conklin later generalized the concept of problem wickedness to areas other than planning and policy. The defining characteristics are [from Conklin, Jeffrey (2006), *Dialogue mapping: building shared understanding of wicked problems*. Wiley Publishing.

1. The problem is not understood until after the formulation of a solution.
2. Wicked problems have no stopping rule.
3. Solutions to wicked problems are not right or wrong.
4. Every wicked problem is essentially novel and unique.
5. Every solution to a wicked problem is a 'one shot operation.'
6. Wicked problems have no given alternative solutions."

"SUPER WICKED PROBLEMS". [Wikipedia]

"Kelly Levin, Benjamin Cashore, Graeme Auld and Steven Bernstein introduced the distinction between 'wicked problems' and 'super wicked problems' in a 2007 conference paper, which was followed by a 2012 journal article in Policy Sciences. In their discussion of global climate change, they define super wicked problems as having the following additional characteristics: [Levin, Kelly; Cashore, Benjamin; Bernstein, Steven; Auld, Graeme (23 May 2012):

1. Time is running out.
2. [There is] no central authority.
3. Those seeking to solve the problem are also causing it.
4. Policies discount the future irrationally."

"While the items that define a wicked problem relate to the problem itself, the items that define a super wicked problem relate to the agent trying to solve it.

Global warming is a super wicked problem, and the need to intervene on behalf of our longer term interests, has also been taken up by others, including Lazarus. [Lazarus, Richard (July 2009). "Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future". *Cornell Law Review* **94** (5): 1153–1233.]"

SUMMARY.

1. "Wicked problems" do not respond to the traditional planning process used to address city planning issues. Like quantum mechanics, the act of measuring alters that which is being measured. Yet many city problems have "wicked" aspects and require a different approach.
2. Recognizing the presence of a "wicked" problem provides insights towards the solution, even though "wicked problems" have no permanent solutions.
3. "Super wicked problems" are present in the city since time seems to always be running out and the victims of the problem are often seen as its cause. Causality is always an unanswerable question. Understanding the characteristics of "wicked problems" helps define the nature of the conversation and eases the frustration of trying to deal with them.
4. "Wicked" problems do not benefit from the traditional planning process:
   a. Problem statements are tough since the problem is only understood through its solution, which is transitory.
   b. Alternative analyses are useful knowing that only one of the alternative solutions will fit the problem since, by definition, there are no alternative solutions to "wicked" problems; every solution is a one-off.
   c. Therefore, there is no value in the "trial and error" approach since any proposed solution changes the character of the problem.
   d. Without a "stopping rule", all solutions are interim; the process goes on like the irrational number line. Anticipation of an on-going process is an important part of the "solution". An interim solution may get the group beyond the immediate crisis, but a continuing committee or group will be needed to work the never-ending problem.