Managing Emerging Contaminants: A Practical Approach

US EPA Workshop on
Pharmaceuticals in the Environment

Las Vegas,
August 23-25, 2005

This presentation does not reflect EPA official position.

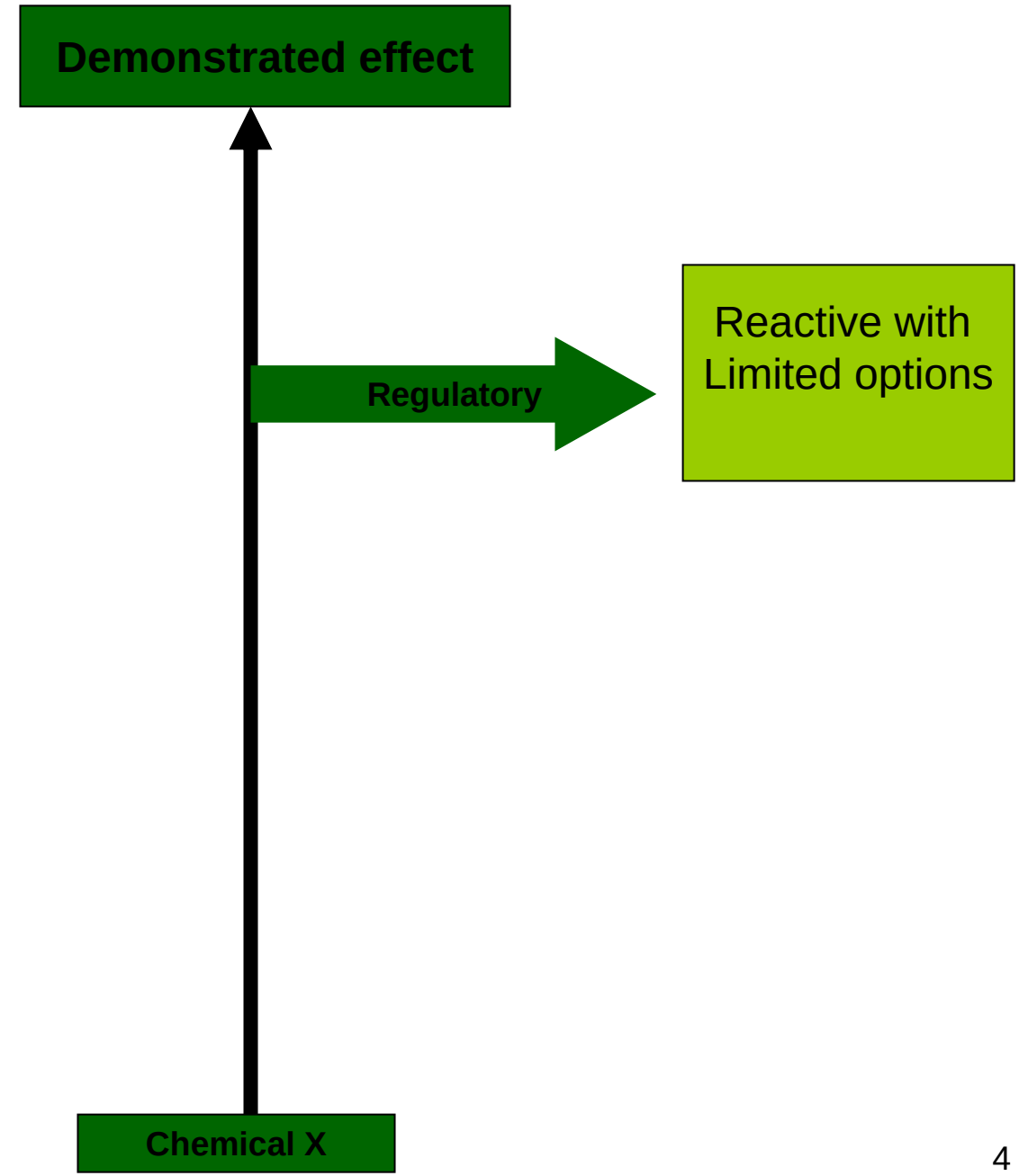
Quick Review of emerging contaminants Issues

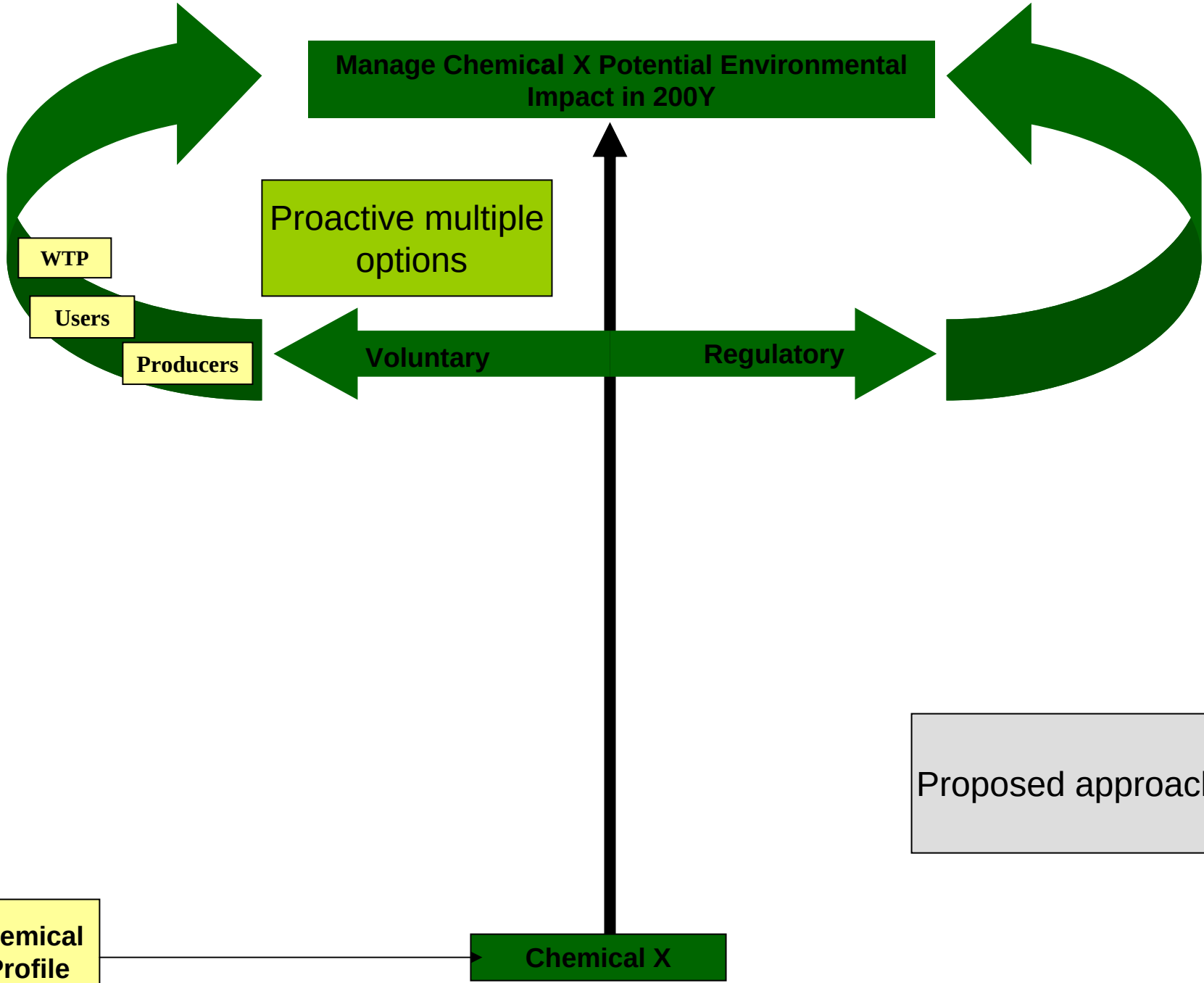
- The characteristics of many emerging contaminants are (low levels, multiple sources, long-term not emergency issue)
- Create a concern about possible estrogenic and other effects, both to wildlife and humans
- No standardized biological test available
- EPA does not have approved chemistry methods to detect many of these chemicals

emerging contaminants Issues cont.

- Enter aquatic environment from point and non-point sources
- The environment fate and transportation Information are lacking
- Policies to address these contaminants are complicated by differing mandates of agencies (EPA, FDA, others)
- We need new tools to help us address this issue thus our approach.

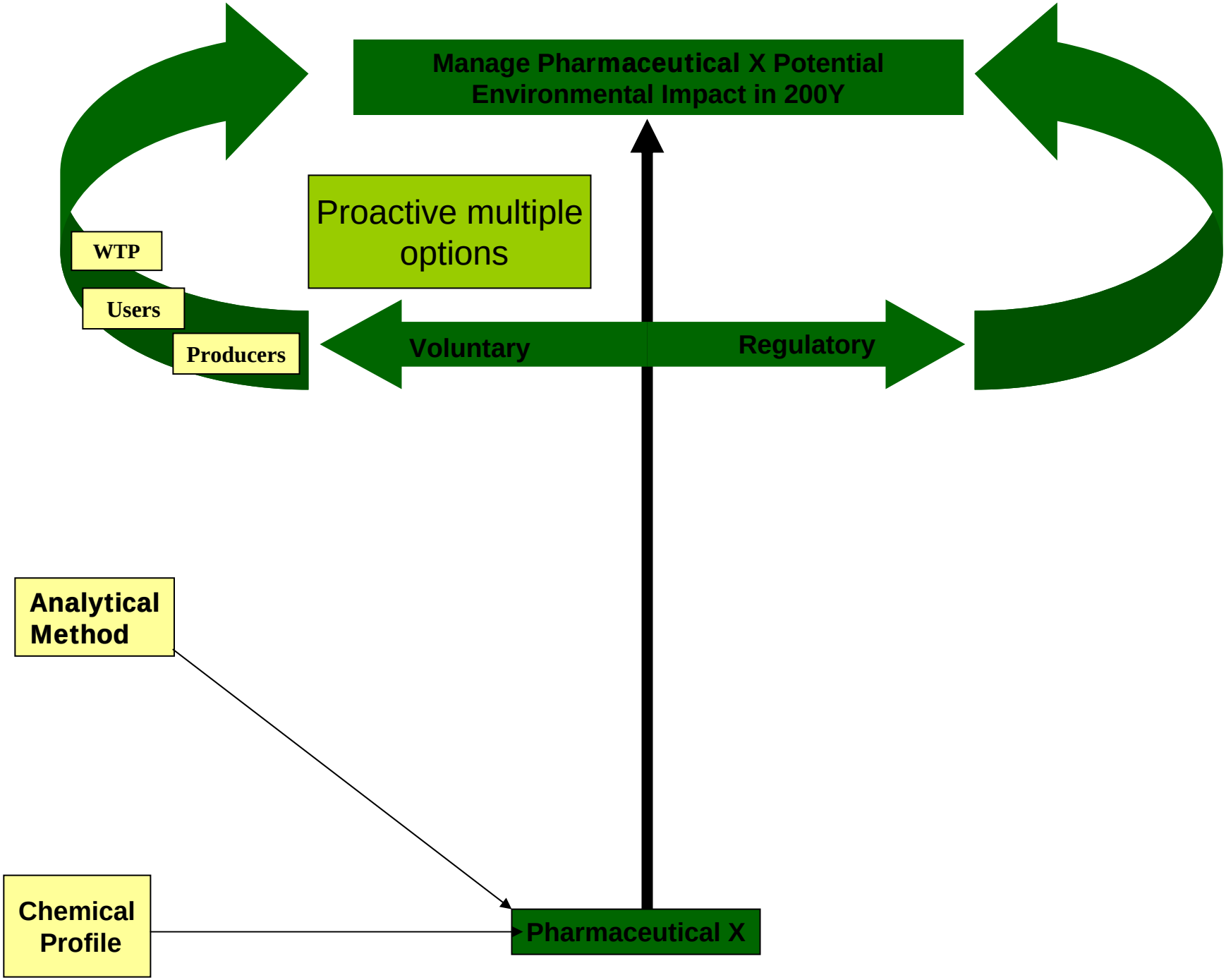
present approach




Manage Chemical X Potential Environmental Impact in 200Y
Proactive multiple options
WTP
Users
Producers
Voluntary
Regulatory
Proposed approach
Chemical Profile
Chemical X

Chemical profile matrix

- Use matrix to select specific chemical
- Utilized existing lists
- Effect on human health & ecology
- Amount produced & used
- Identify producers & users
- Information on Fate & transportation
- Understand Waste treatment efficiency


Manage Pharmaceutical X Potential Environmental Impact in 200Y
Proactive multiple options
WTP
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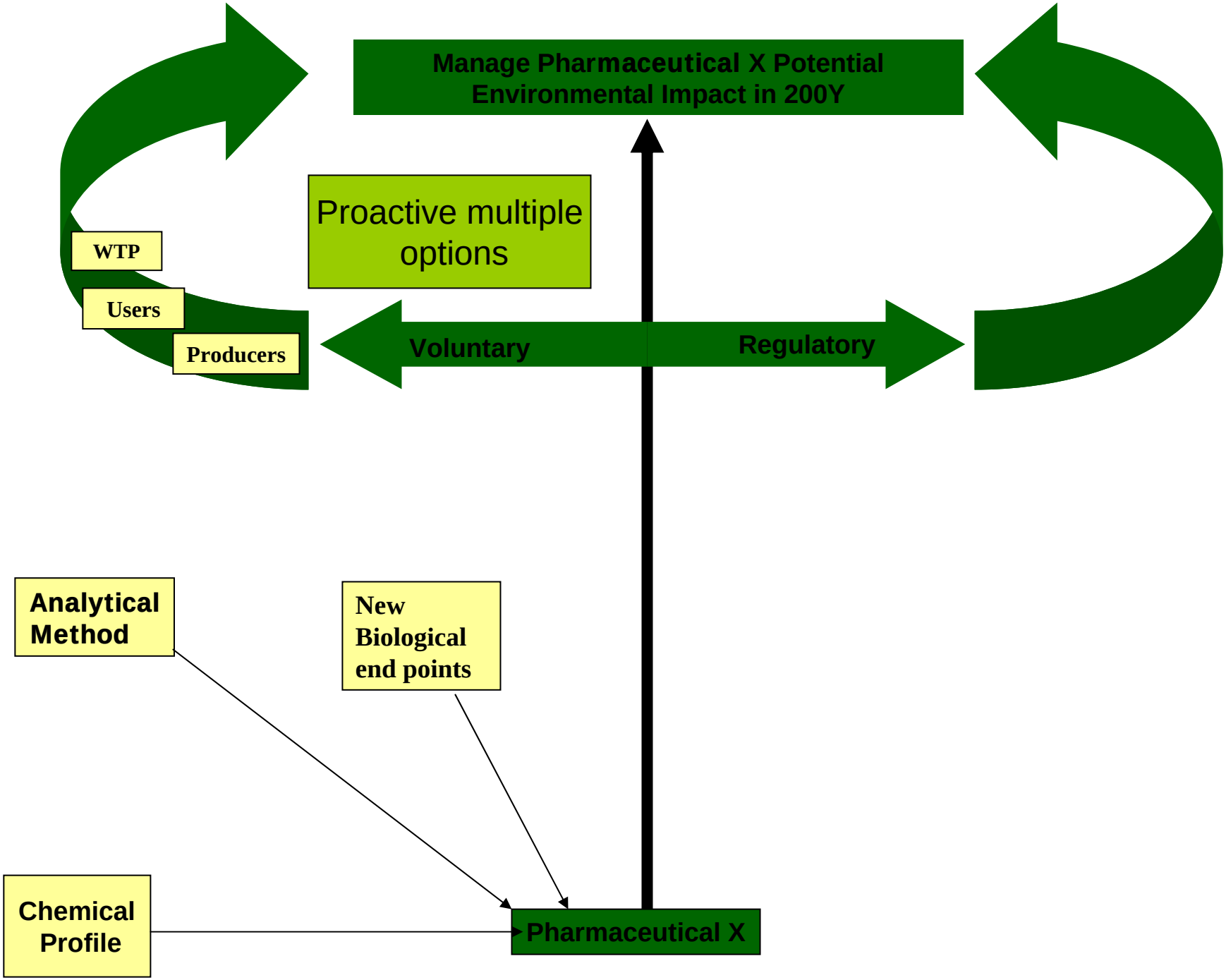
Regulatory
Analytical Method
Chemical Profile
Pharmaceutical X

Analytical method (AM)

- Region/ORD adopt/develop new AM
- No waiting for regulated trigger
- Publish method with application
- Compile EPA SOPs and share
- Publish new emerging contaminant EPA method as guidance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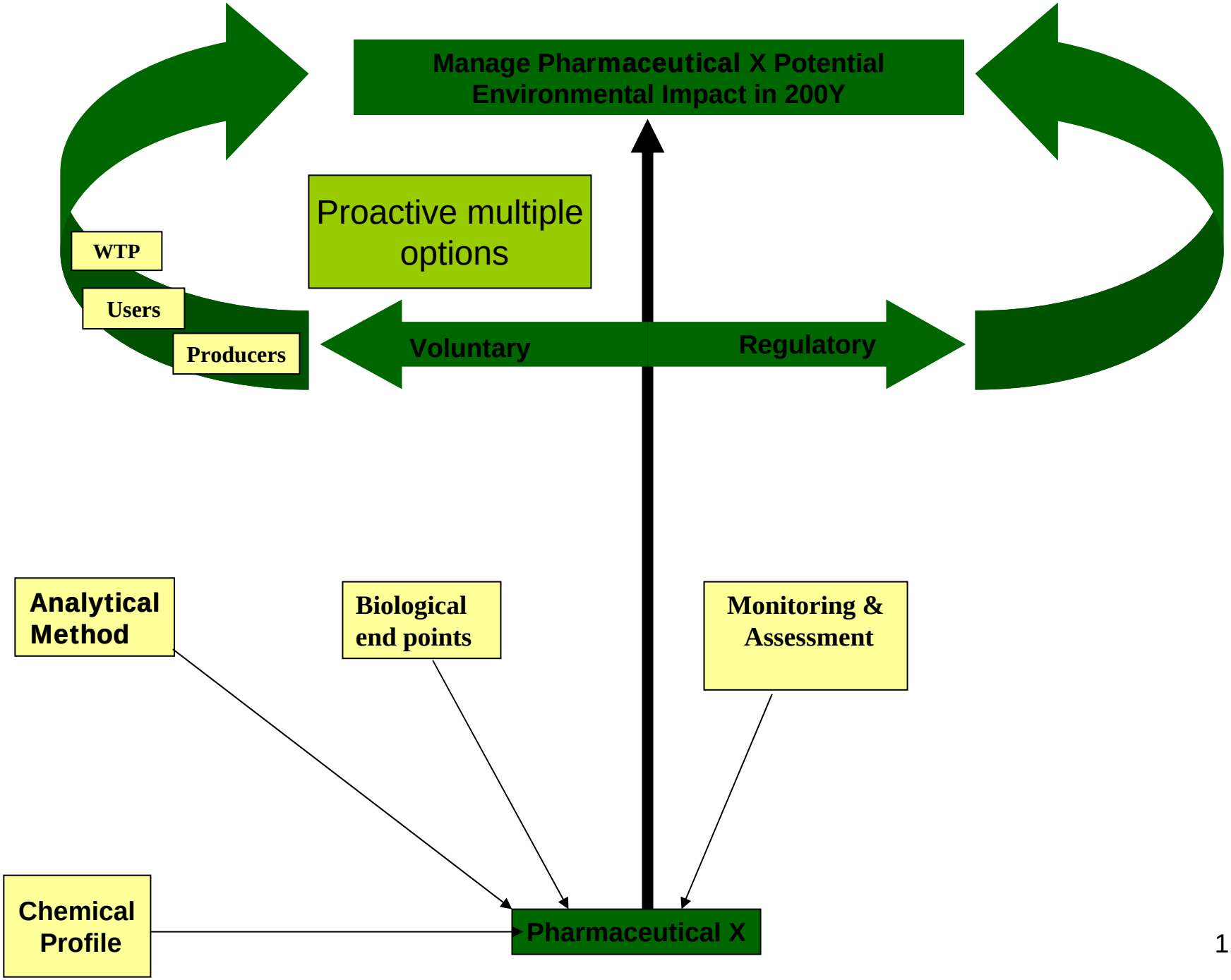
New Biological end points
Chemical Profile
Pharmaceutical X

New Biological end Points (NBEP)

- Focus on sensitive NBEP
- Utilize all available technology
- Region/ORD adopt/develop NBEP.
- Collaborate with stakeholders
- Collaborate with academia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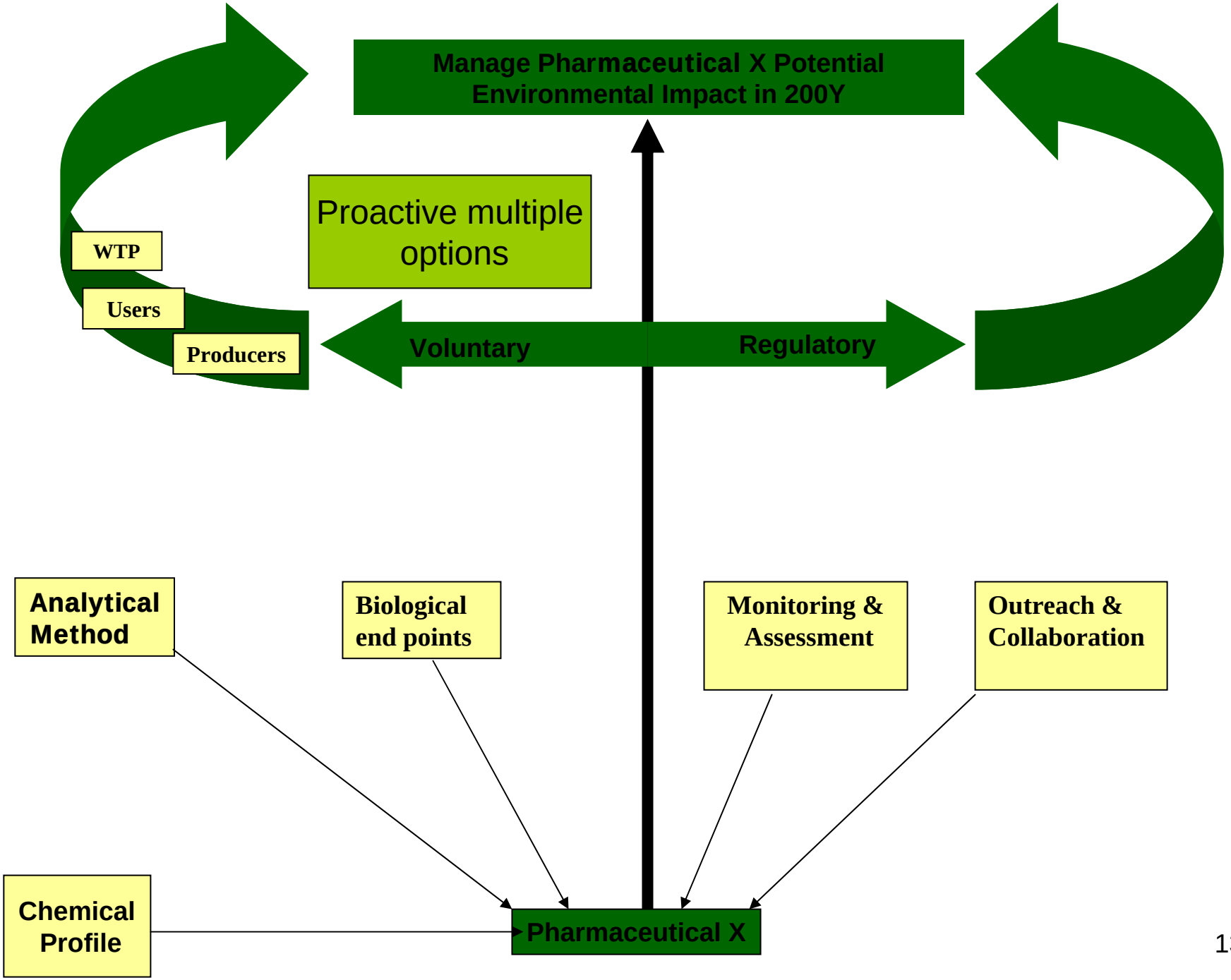
Monitoring & Assessment
Chemical Profile
Pharmaceutical X

Monitoring & assessments

- Establish regional/ORD capability to work in collaborations with stakeholders
- Reach out to academia to work on specific projects together
- Focus on target monitoring to solve specific questions
- Conduct base line monitoring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Outreach & Collaboration
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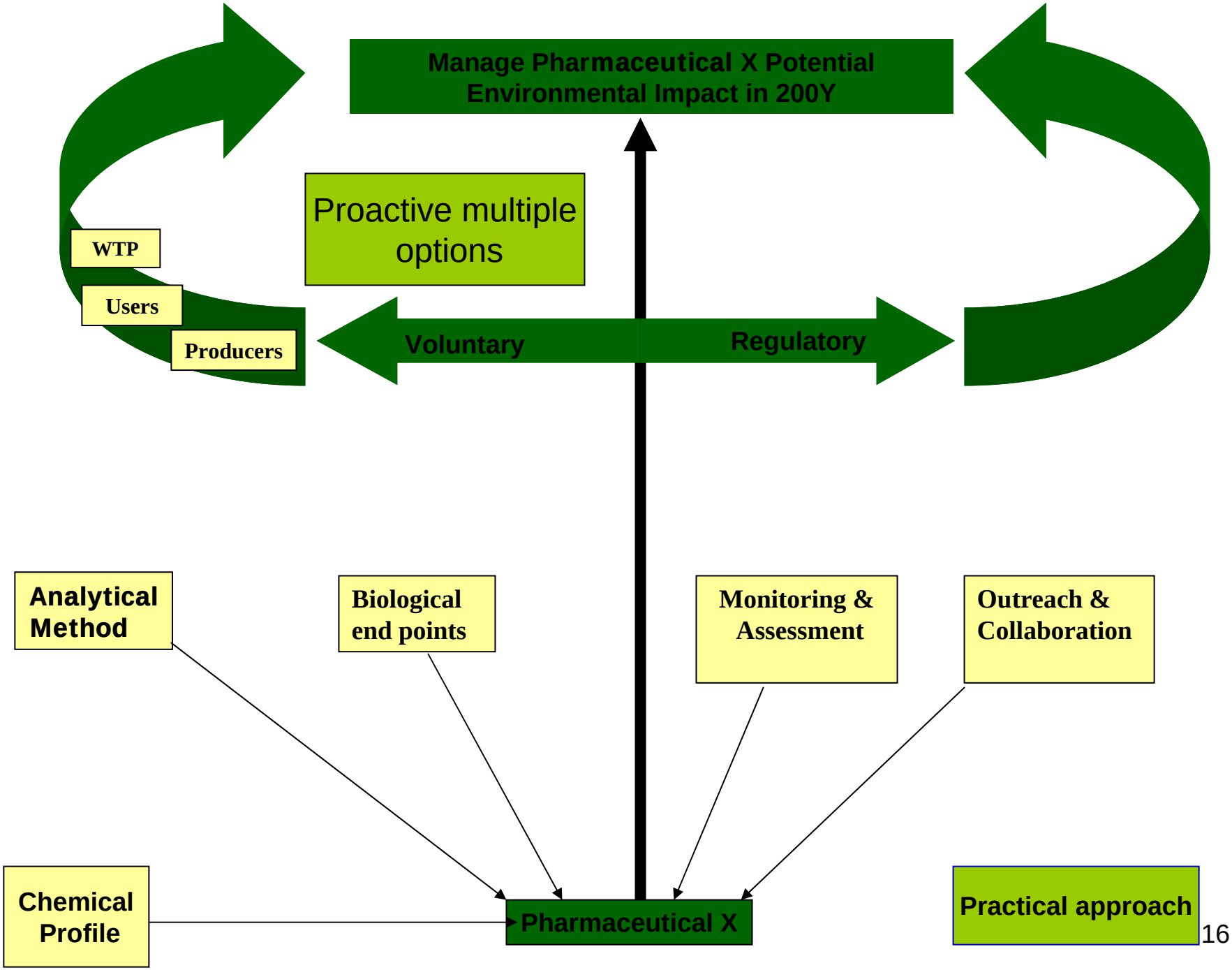
Collaboration & Outreach

- EPA ORD, Regions & HQ
- USGS, USDA & Others
- Innovative partnerships with Stakeholders
- Regions will play an active role to emphasize local issues
- Strengthen relationships with academia

Practical Approach characteristics

- Provide a frame work to address the EC
- ID tools namely CP, AM, BT, MA & CO
- Provide a local solution to EC
- Regional EPA will play a leading role in building stakeholder collaboration
- Solving the EC issue in partnerships and collaboration with stakeholders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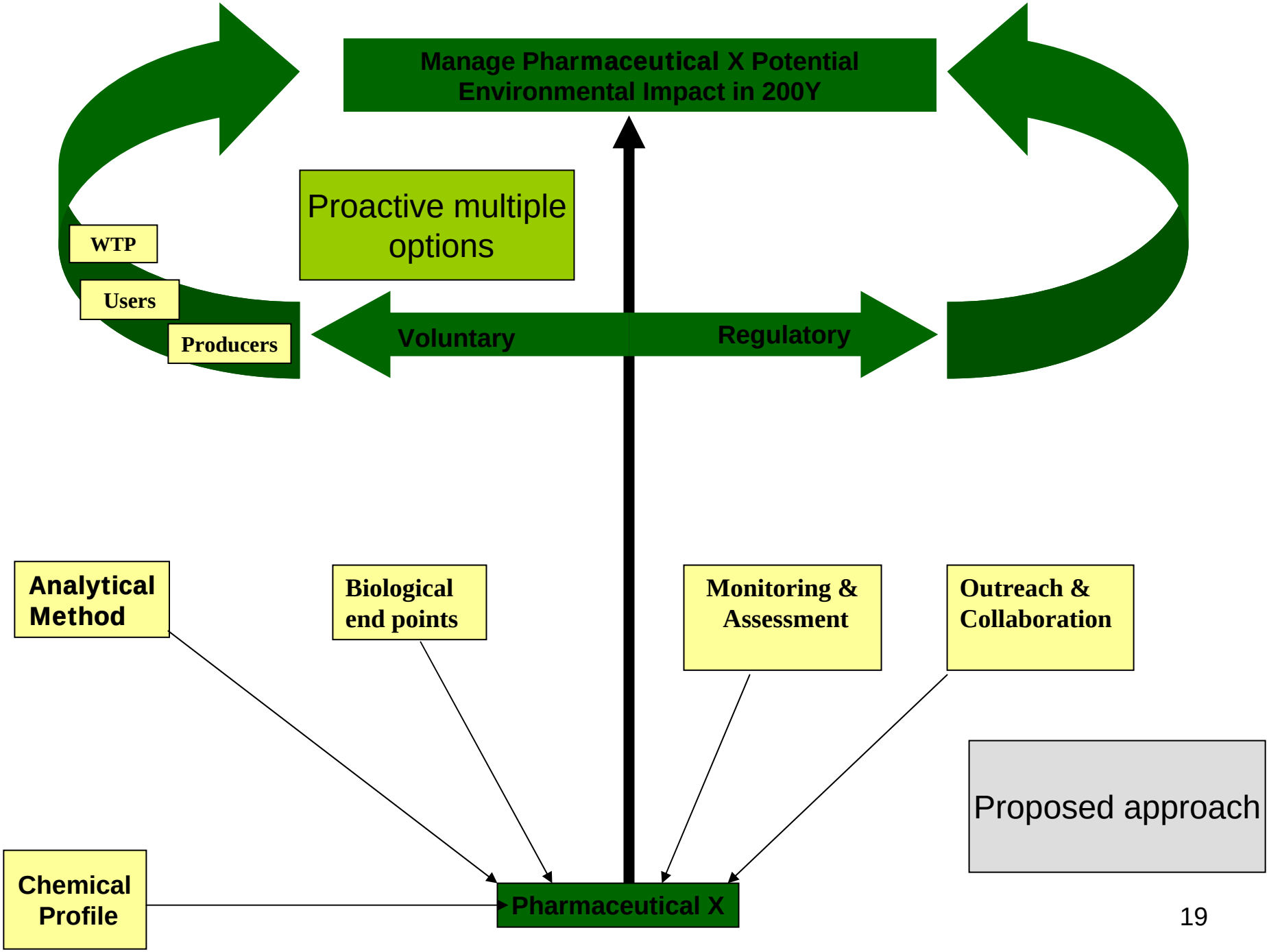
Practical approach

Future plan

- Continue building our collaboration & partnerships
- Promote this approach to be EPA main approach for emerging contaminants
- Request resources for this effort
- Look for new partners

Future plan, cont.

- Collaborate with stakeholders. (e.g. WTP, Industry, etc.)
  - Continue our collaborate work with the District to identify APEs sources pathways.
  - Agree on goal for 2008 with stakeholders.
- Work with academia to solve this issue. (collaborate on studying the environmental impact)
- Reach out to all for creative & innovative solutions (look for additional partners, ideas etc)
  - Example, SWiMS
- Leading to APEs reduction in 2008 (Identify APEs major sources & address reduction).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BREAKOUT SESSION I:

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BREAKOUT SESSION I:

- **What chemical methods are needed for monitoring Pharmaceuticals in the environment?**
- **What are the barriers in using existing chemical methods for monitoring Pharmaceuticals in the environment?**

BREAKOUT SESSION I: cont.

- Can EPA process, for develop new chemical methods, be modified to address new pharmaceuticals?
- Should we evaluate other options, out side EPA, if so which?
- What pharmaceuticals concentration would EPA use for base line and target monitoring?

BREAKOUT SESSION I: cont.

- Which pharmaceuticals should the Regions focus on monitoring?
- What can we do until there are EPA approved methods for detection of pharmaceuticals and personal care products?
- How to find out the relative mass of unused versus excreted drugs that enter into waste water treatment plants?