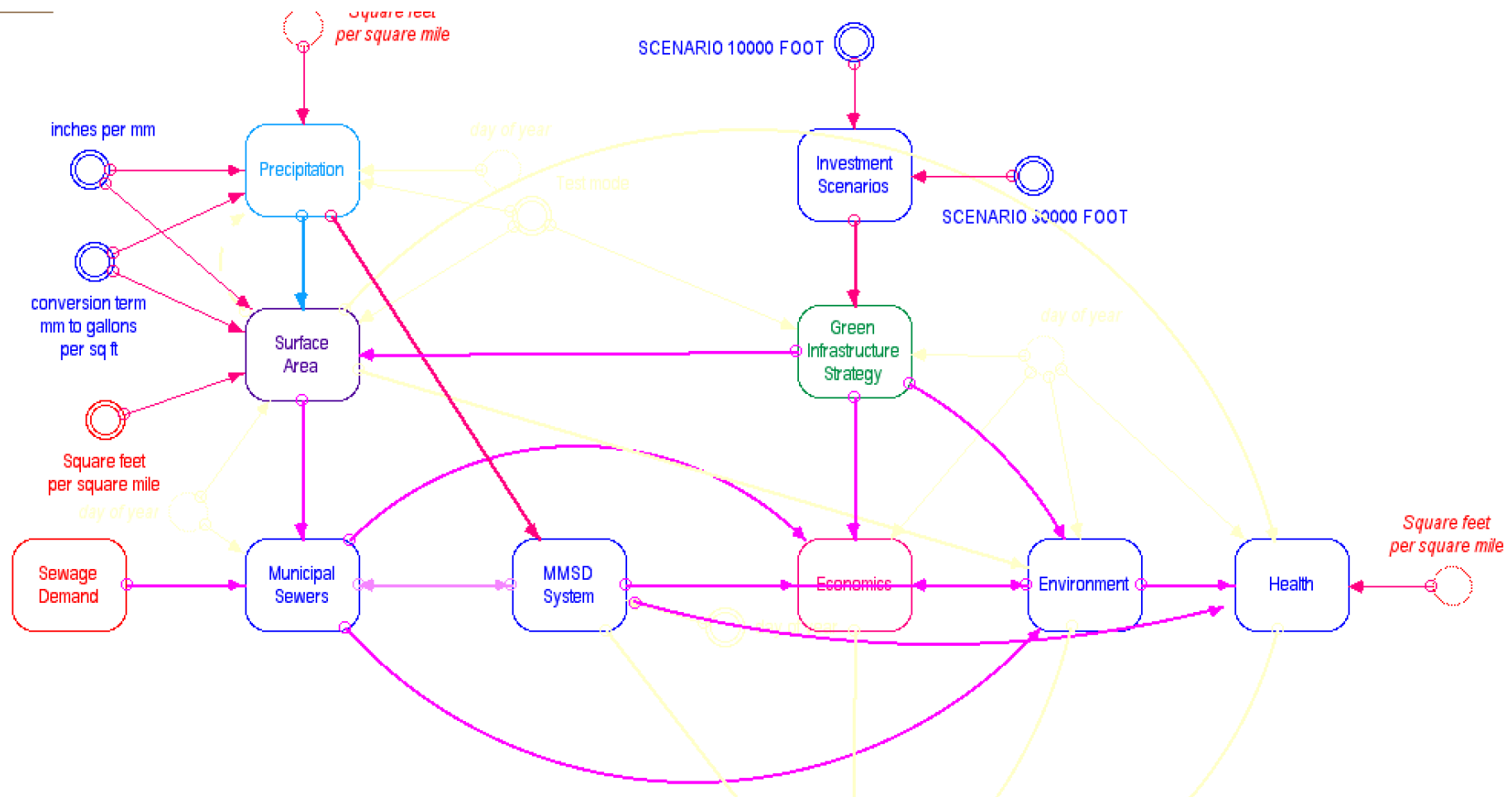




Stronger Communities, Healthier Landscapes: The Multiple Benefits of Preparing for Climate Change

Elizabeth Sawin
Climate Interactive
UVAW Forum
April 2014

Systems analysis



- day_of_year = COUNTER(1,366)
- day_of_year_1 = COUNTER(1,366)
- inches_per_mm = 0.0393701
- Pause_every_5_years? = 0
- pause_it = IF Pause_every_5_years?=1 AND TIME>2 AND days_in_5_years=1825 THEN 1 ELSE 0
- SCENARIO_10000_FOOT = 1
- SCENARIO_30000_FOOT = 0
- Square_foot_per_square_mile = 27878000
- Stop_sim = IF TIME>=days_to_simulate+1 THEN 1 ELSE 0
- Test_mode = 0
- YEAR = INT(TIME/365)
- Years_to_Simulate = 20

Baseline Comparison:

- 4. $\text{Saved_Value}[\text{Compare}](t) = \text{Saved_Value}[\text{Compare}](t - dt) + (\text{remembering}[\text{Compare}]) * dt$
INIT Saved_Value[Compare] = 0
INFLOWS:

Using systems analysis to help people see the whole system and make wise long-term decisions





We can find opportunities to respond to climate change that, ***for the same investment of time and money***, bring us other benefits

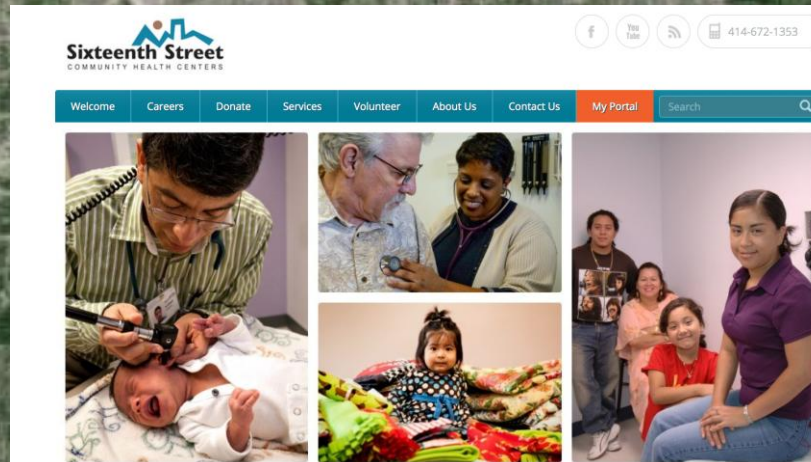




- Case study from a project in Milwaukee, Wisconsin
- Examples and implications for our region



Kinnickinnic River Watershed- Milwaukee Wisconsin



\$\$ Investment



Costs
Stormwater management
Other benefits
?

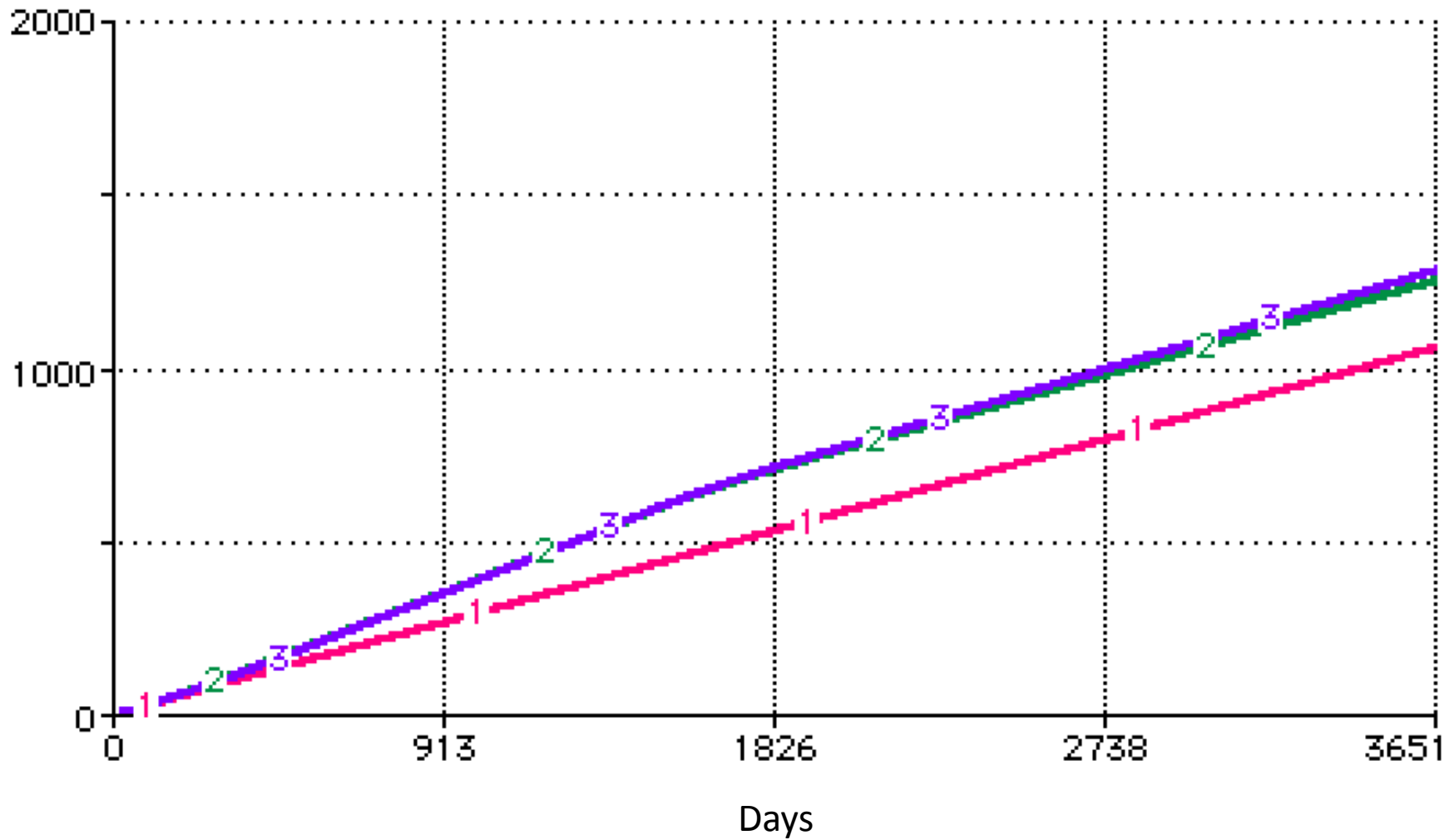
\$\$ Investment



Costs
Stormwater management
Other benefits
?

Similar Investments

Cumulative \$M Total: 1 - 2 - 3 -

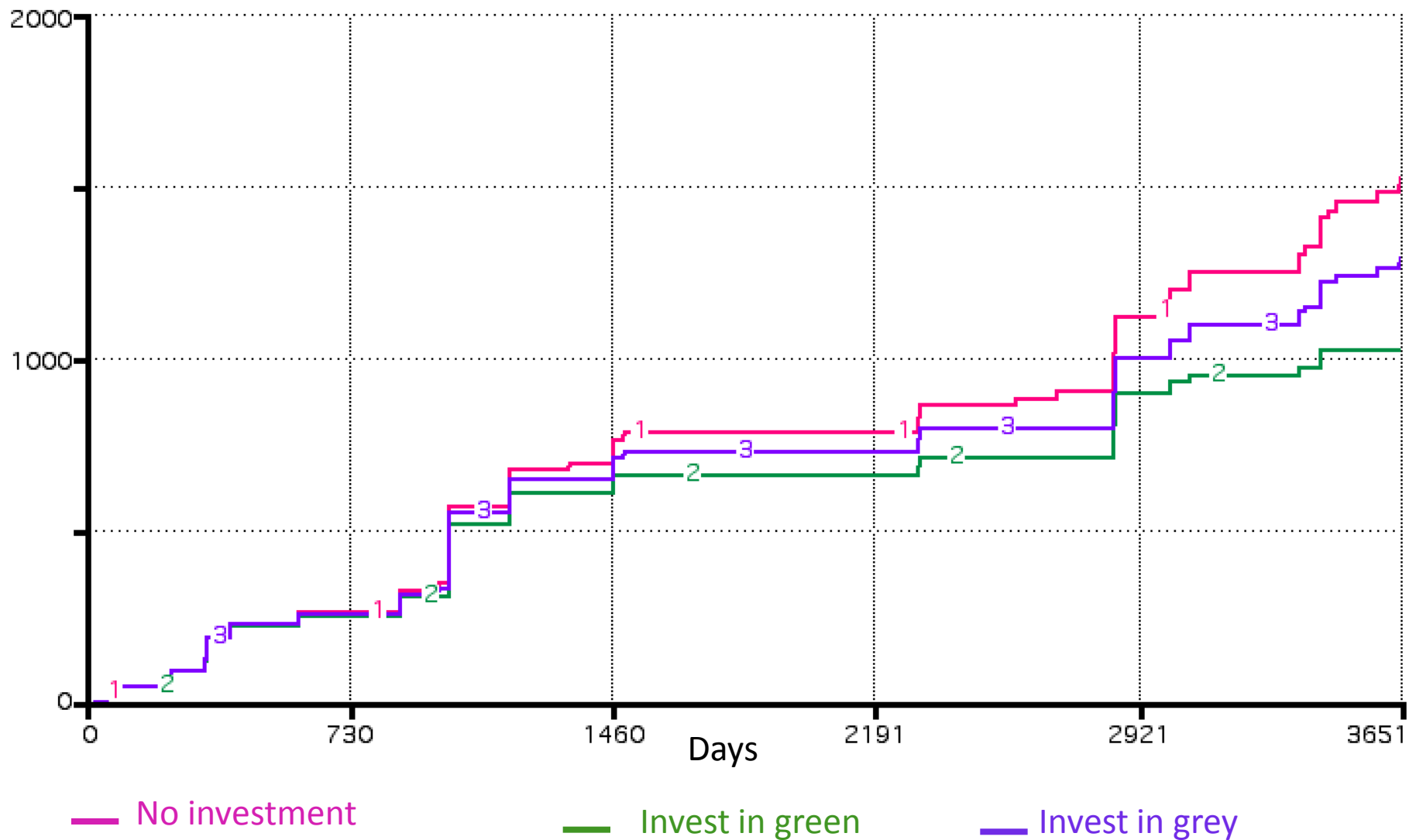


— No investment

— Invest in green

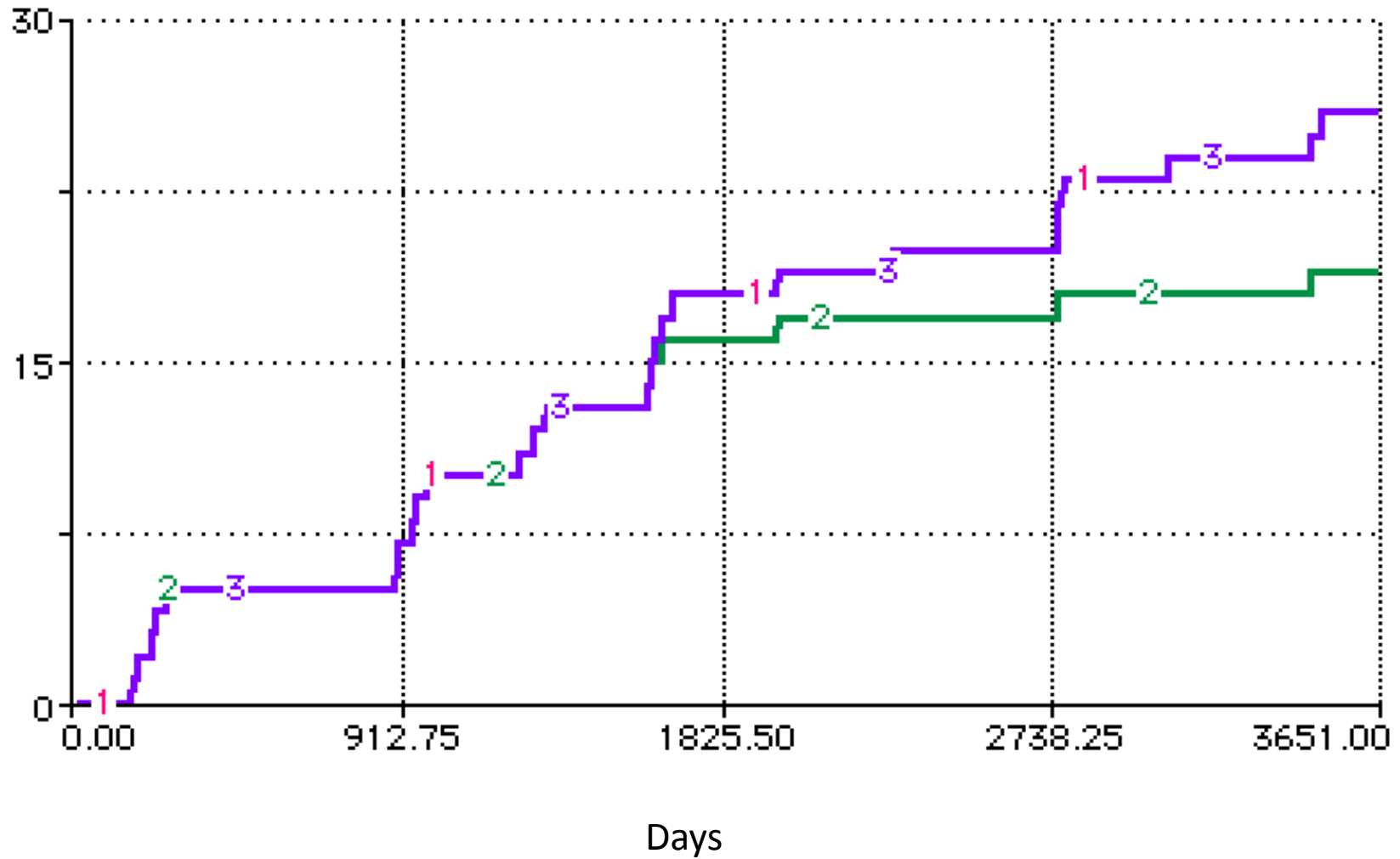
— Invest in grey

Million Gallons Combined Sewer Overflow



Better air quality

Bad Air Days: 1 - 2 - 3 -



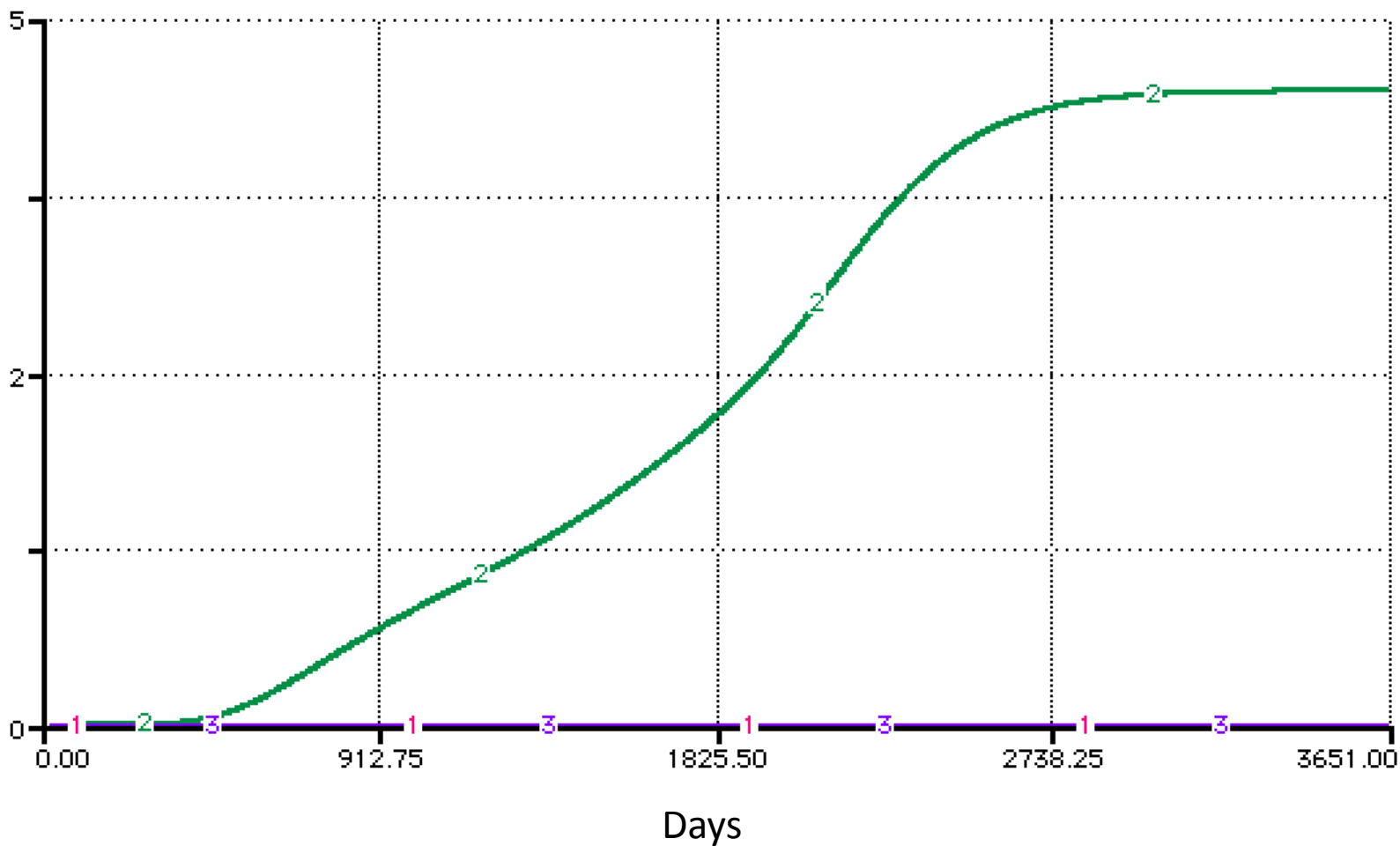
— No investment

— Invest in green

— Invest in grey

Property Values

Property value change % from initial: 1 - 2 - 3 -



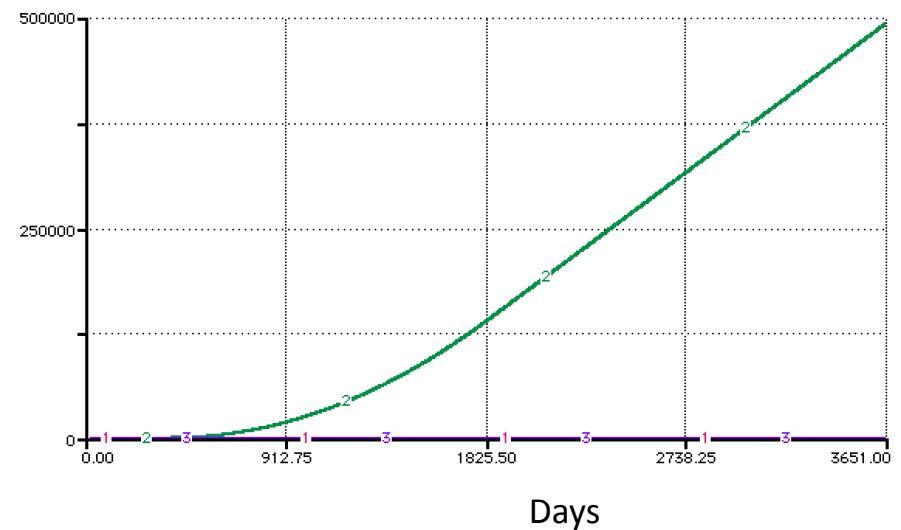
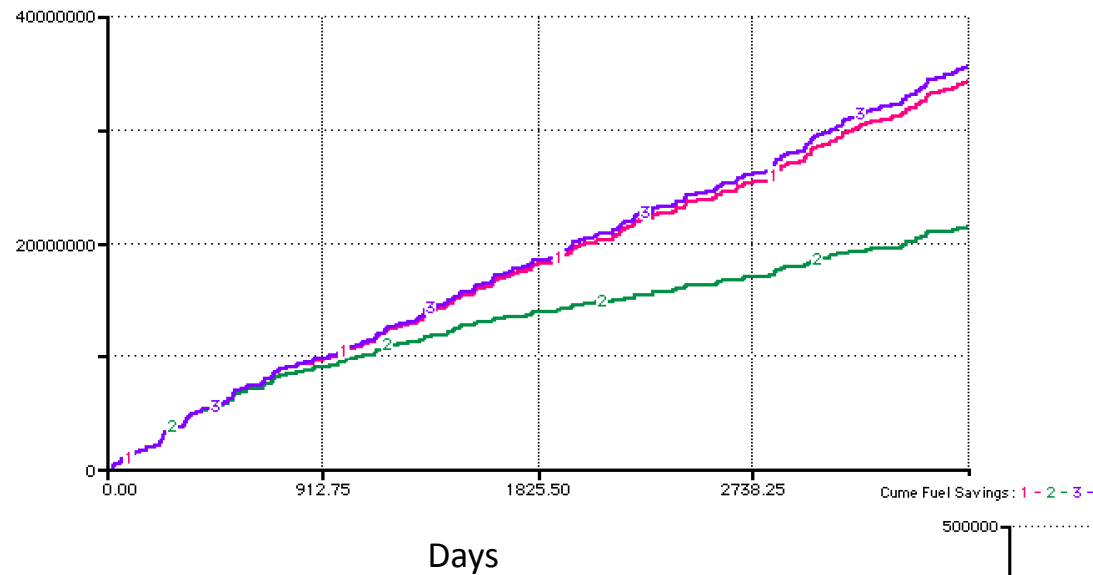
— No investment

— Invest in green

— Invest in grey

Energy and emissions

Cume MMSD pumping & processing costs: 1 - 2 - 3 -



— No investment

— Invest in green

— Invest in grey



What resilience strategies
might we have access to
in the Upper Valley?





1: Community Organizations





Prepare and deal

- Co-ordinated volunteers
- Had supplies
- Knew who needed help



Prevent

- Weatherization and energy efficiency





Improve

- Food
- Shelter
- Support



2: Local Businesses



Prepare and Deal

- Water filtration
- Cooking
- Helicopter
- Gathering place



Prevent



- Renewable energy companies
- Renewable energy systems for local businesses



Improve

- Jobs
- Tax base



3: Nature



Prepare and Deal

- Wetlands slow and absorb and slow the flow of water in a flood





Prevent

- Absorbing CO₂ and sequestering carbon



Improve

- Purify Water
- Provide habitat
- Provide recreation



4: Infrastructure



Prepare

- Avoid more extensive damage from extreme events



Prevent

- Projects to improve infrastructure can add features that help save energy and reduce greenhouse gas emissions at the same time



Improve

- Money not needed to repair damaged infrastructure can be invested towards other needs





Thank You!
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