ATTACHMENT K

Phasing Options, GHG and Cost Analysis, and Decision Matrix

PHASING IN COMPLIANCE

All of the phasing options assume an effective date of January 3, 2011.

Phasing option 1: First Rental Cycle

Compliance at 1st rental license renewal

- At the time of first rental license renewal, property owners must demonstrate compliance through either:
    1. 100 points on the prescriptive list OR
    2. HERS 120 on the performance path

Pros

- All current licensed rental units will be upgraded to code by 2014.

Cons

- Investment is over a shorter time frame than other options.
- Contractor workforce may not be developed enough to handle capacity.

Phasing option 2a: Two rental license cycles – larger investment in beginning

- At the time of the first rental license renewal, property owners must either:
    1. Demonstrate an increase of 50 points on the prescriptive list. In the case that the property's baseline is greater than 50 points, the property would need to get the amount of points (less than 50) to reach 100. OR
    2. Comply with HERS 120 on the performance path
- At the time of the second rental license renewal, property owners must:
    1. Achieve the remaining points on the prescriptive list to reach 100.

Pros

- Phases in compliance for properties that have to get more than 50 points from their property's baseline on the prescriptive list.
- Allows contractor workforce time to develop capacity

Cons

- Small amount of GHG reductions by 2012.
- Likely to require most of investment in first rental cycle, since 50 points from baseline are required.
- All current licensed rental units will be upgraded by 2018.

Phasing option 2b: Two rental license cycles – larger investment towards end

- At the time of the first rental license renewal, property owners must either:
    1. Demonstrate a baseline of 50[1] points on the prescriptive list. In the case that the property's baseline is less than 50 points, the property would need to get the amount of points to reach 50. OR

[1] Most of the case study properties' baseline points were close to or over 50.

    2. Comply with HERS 120 on the performance path
- At the time of the second rental license renewal, property owners must:
    1. Achieve the remaining points on the prescriptive list to reach 100.

Pros
- Spreads the cost out over a longer time frame for property owners.
- Allows contractor workforce time to develop capacity.
- The longer time-frame for upgrades (most of the work will be completed in the second cycle since many properties will likely be close to or at 50 point requirement for 1st cycle) allows property owners to take advantage of tenant turn-over as a time to complete the upgrades.

Cons
- Smaller amount of GHG reductions by 2012.
- All current licensed rental units will be upgraded by 2018.

Phasing option 3: Compliance over 2 rental license cycles with offsets

- At the time of the first rental license renewal, property owners must either:
    1. Purchase four years worth of carbon offsets or contribute to a local investment fund OR
    2. Demonstrate compliance through either:
        - 100 points on the prescriptive list OR
        - HERS 120 on the performance path
- At the time of the second rental license renewal, properties must demonstrate compliance through either:
        - 100 points on the prescriptive list OR
        - HERS 120 on the performance path

Pros
- Allows property owners to make a smaller investment initially in offsets while they accrue capital for investment.
- A percentage of the offsets revenue or local investment could be used to fund other energy efficiency or greenhouse gas related initiatives.

Cons
- Funds spent of offsets do not provide lasting GHG emissions reductions and could be spent on upgrades.
- If local investment option is chosen, the greenhouse gas emissions reductions will not reach the levels outlined in Table X.
- All current licensed rental units will be upgraded by 2018.

Phasing option 4: Voluntary compliance, rental rating system

This option would lay the framework of the program through the voluntary rental rating system and encourage voluntary reporting and compliance. Progress towards compliance can be measured through the market-based rating system. This can be evaluated mid-way to determine the effectiveness by 2018.

Pros

- Allows time for the workforce to develop as well as any other incentives for improvements.
- Tests the “market-based” approach with the rental rating system.

Cons

- Unable to estimate impact and effectiveness
- Market transformation (renters drive the demand for more efficient rental units) could take a long time and variables such as location of the property (ex: the Hill) might outweigh the demand for efficiency.

A summary of the phasing options and their ability to meet the objectives of the SmartRegs program by 2012, 2015, and 2018 are as follows:

Summary of phasing options and impacts by 2012, 2015, and 2018

	2012					
	Cumulative GHG reduction (% of sector contribution)	Cumulative % of units upgraded	Cumulative Estimated Cost	Cumulative Estimated Offsets Cost	Cumulative Estimated City, Utility, Federal Investment	Cumulative Estimated Private Investment: Building Upgrades
Option 1	53%	58%	$ 14.2M	na	$ 3.9M	$ 10.4M
Option 2a	39%	43%	$ 10.7M	na	$ 3.0M	$ 7.8M
Option 2b	13%	14%	$ 3.6M	na	$ 1.0M	$ 2.6M
Option 3	95%	12%	$ 4.7M	$ 1.9M	$ 8.0M	$ 2.1M
Option 4	unknown	unknown	unknown	unknown	unknown	unknown

	2015					
	Cumulative GHG reduction (% of sector contribution)	Cumulative % of units upgraded	Cumulative Estimated Cost	Cumulative Estimated Offsets Cost	Cumulative Estimated City, Utility, Federal Investment	Cumulative Estimated Private Investment: Building Upgrades
Option 1	91%	100%	$ 24.5M	na	$ 6.9M	$ 17.7M
Option 2a	77%	85%	$ 20.9M	na	$ 5.8M	$ 15.1M
Option 2b	50%	55%	$ 13.6M	na	$ 3.6M	$ 10.0M
Option 3	134%	52%	$ 16.0M	$ 3.2M	$ 3.4M	$ 9.5M
Option 4	unknown	unknown	unknown	unknown	unknown	unknown

	2018					
	Cumulative GHG reduction (% of sector contribution)	Cumulative % of units upgraded	Cumulative Estimated Cost	Cumulative Estimated Offsets Cost	Cumulative Estimated City, Utility, Federal Investment	Cumulative Estimated Private Investment: Building Upgrades
Option 1	91%	100%	$ 24.5M	na	$ 6.9M	$ 17.7M
Option 2a	91%	100%	$ 24.5M	na	$ 6.9M	$ 17.7M
Option 2b	91%	100%	$ 24.5M	na	$ 6.9M	$ 17.7M
Option 3	91%	100%	$ 27.7M	$ 3.2M	$ 6.9M	$ 17.7M
Option 4	unknown	unknown	unknown	unknown	unknown	unknown

Assumptions

- The percentage of dwelling units is adjusted for the estimate of units already in compliance (ex: built after 2001, units already upgraded)
- GHG reductions and cost are an average over all dwelling units, weighted by different housing types and the estimated reductions and costs (see table XX)
- City, Utility, and Federal Investments include Climate Action Plan tax through 2012, Xcel Energy Demand-Side Management (DSM) rebates, and federally funded income-qualified weatherization
- Carbon offsets in Option 3 are based on the current rate of $20/ton through the Colorado Carbon Fund, the required purchase amount would be 3 tons/year for a four year period; $60/year; $240/4 years
- Option 3 calculations assumed that 80% of dwelling units purchase offsets in the first rental cycle
- Option 2a: assumed 75% of investment in first rental cycle, 25% in second
- Option 2b: assumed 25% of investment in first rental cycle, 75% in second

Decision Matrix with Primary and Secondary Criteria

	Primary Criteria				
	Compliance with CAP goals - by 2012	**Total investment funds building upgrades**	**Long term GHG reductions**	**Phased Investment**	**Total**
Option 1	2	3	2	1	8
Option 2a	1	3	2	1	7
Option 2b	1	3	2	3	9
Option 3	3	1	2	2	8
Option 4	unknown	unknown	unknown	unknown	NA

	Secondary Criteria			
	Workforce Capacity	**Ease of Implementation (City)**	**Ease of Implementation (Customer)**	**Total**
Option 1	2	2	1	5
Option 2a	2	2	2	6
Option 2b	3	2	3	8
Option 3	3	1	2	6
Option 4	unknown	3	unknown	3

Key
1 = low performance
2 = medium performance
3 = high performance

Description of Criteria

The primary criteria are weighted more heavily in staff's decision-making process due to the direct relationship to the goals of the program.

Primary Criteria

1. Compliance with CAP Goals by 2012 – Refers to the amount of GHG reductions, as a percentage of this sector's contribution towards the CAP goal, achieved by 2012 as a result of this program.
   - Low performance = less than 50%
   - Medium performance = 50%-75%
   - High performance = greater than 75%
2. Total investment funds building upgrades – Refers to financial investment funding building upgrades in energy efficiency as a result of this program.
   - Low performance = Investment includes the purchase of carbon offsets
   - High performance = All funding is invested in upgrading the building's energy efficiency
3. Long term GHG reductions – This program has an assumed capacity for achievable GHG reductions once all licensed rental units are upgraded. These options are designed that all buildings will be upgraded by 2018, so all options received a ranking of medium performance.
4. Phased Investment – This criteria refers to the amount of time property owners will have to make investments in their buildings as well as when the investment will be required (towards the beginning versus towards the end of the time period). It is assumed that all options would require at the total investment in building upgrades by 2018, Option 3 also includes an additional $3.2M for offsets purchases.
   - Low performance = Most or all of the private sector investment by 2015 ($20.9M to $24.5M by 2015)
   - Medium performance = Approximately 60% of the total investment by 2015 ($16.0M by 2015)
   - High performance = Less than 60% of the total investment by 2015 ($13.6M by 2015)

Secondary Criteria

1. Workforce capacity – Refers to the time frame over which the upgrades will take place and the estimated ability of the workforce to handle to scale of work. The longer phasing options have a higher performance rating.
2. Ease of Implementation (city) – Refers to the city's administrative burden to implement the option. Higher performing options are ones that have less points of interaction with the city.
3. Ease of Implementation (customer) – Refers to the customer's impact financially over time. Options with higher performance have the investment weighted towards the end of the implementation phasing (2018).